WEST Search History

10/624,503

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	DB=PGPB,USPT,EPAB,JPAB,DWPI; PLUR=YES; OP=OR		
☐	L6	L5 same l4 same l3 same l2	31
☐	L5	antibody or antibodies	247719
☐	L4	biotin	62149
☐	L3	avidin or streptavidin	51217
☐	L2	HABA	2252

END OF SEARCH HISTORY

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Application Number Submit

IDS Flag Clearance for Application 10624503

IDS Information

Content	Mailroom Date	Entry Number	IDS Review	Last Modified	Reviewer
M844	2003-07-23	18	Y ☑	2006-08-04 13:21:32.0	mceperley
Update					

L3 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:335383 HCAPLUS
DOCUMENT NUMBER: 132:345164
ENTRY DATE: Entered STN: 19 May 2000
TITLE: Avidin derivatives conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof
INVENTOR(S): Wilchek, Meir; Bayer, Edward A.; Morpurgo, Margherita; Hofstetter, Heike
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel
SOURCE: PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
INT. PATENT CLASSIF.:
MAIN: C07D207-40
SECONDARY: C07C245-08; C07C235-34; A61K031-192; A61K031-195; A61P043-00; C07K014-36; C07D273-02
CLASSIFICATION: 9-15 (Biochemical Methods)
Section cross-reference(s): 15, 27
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000027814	A1	20000518	WO 1999-IL605	19991110
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6632929	B1	20031014	US 2001-831499	20010807
US 2004191832	A1	20040930	US 2003-624503	20030723
PRIORITY APPLN. INFO.:			IL 1998-126990 A	19981110
			WO 1999-IL605 W	19991110
			US 2001-831499 A3	20010807

PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000027814	ICM	C07D207-40
	ICS	C07C245-08; C07C235-34; A61K031-192; A61K031-195; A61P043-00; C07K014-36; C07D273-02
	IPCI	C07D0207-40 [ICM,7]; C07D0207-00 [ICM,7,C*]; C07C0245-08 [ICS,7]; C07C0245-00 [ICS,7,C*]; C07C0235-34 [ICS,7]; C07C0235-00 [ICS,7,C*]; A61K0031-192 [ICS,7]; A61K0031-195 [ICS,7]; A61K0031-185 [ICS,7,C*]; A61P0043-00 [ICS,7]; C07K0014-36 [ICS,7]; C07K0014-195 [ICS,7,C*]; C07D0273-02 [ICS,7]; C07D0273-00 [ICS,7,C*]
	IPCR	A61K0031-185 [I,C*]; A61K0031-192 [I,A]; A61K0031-195 [I,A]; A61P0043-00 [I,A]; A61P0043-00 [I,C*]; C07C0235-00 [I,C*]; C07C0235-34 [I,A]; C07C0245-00 [I,C*]; C07C0245-08 [I,A]; C07D0207-00 [I,C*]; C07D0207-40 [I,A]; C07D0273-00 [I,C*]; C07D0273-02

considered 08/04/06 MEC

this applicn

		[I,A]; C07K0001-00 [I,A]; C07K0001-00 [I,C*]; C07K0001-13 [I,A]; C07K0014-195 [I,C*]; C07K0014-36 [I,A]; G01N0033-532 [I,A]; G01N0033-532 [I,C*]; G01N0033-544 [I,C*]; G01N0033-545 [I,A]; G01N0033-551 [I,C*]; G01N0033-552 [I,A]; G01N0033-553 [I,A]
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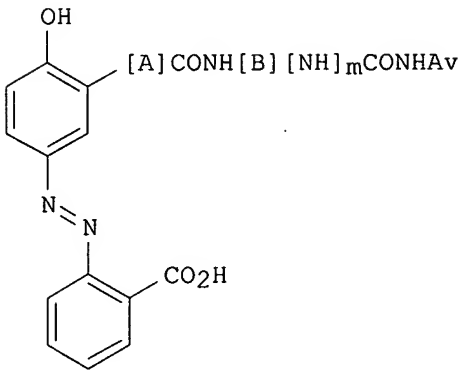
	NCL	530/409.000; 435/007.500; 436/526.000; 436/527.000; 436/529.000; 436/531.000; 540/455.000
US 2004191832	IPCI	G01N0033-53 [ICM,7]
	IPCR	G01N0033-53 [I,A]; G01N0033-53 [I,C*]
	NCL	435/007.100

OTHER SOURCE(S): MARPAT 132:345164

GRAPHIC IMAGE:



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ABSTRACT:
Disclosed is a covalent conjugate of a 4'-hydroxyazobenzene-2-carboxylic acid derivative (HABA) and an avidin-type mol., I (A is (CH2)n or -CH=CH-, wherein n is an integer from 0-10; B is (CH2)n wherein n is an integer from 2-10; m is zero or 1; and Av is the residue of an avidin-type mol. selected from the group comprising native egg-white avidin, recombinant avidin, deglycosylated avidins, bacterial streptavidin, recombinant streptavidin, truncated streptavidin and other derivs. of said avidin-type mols.). These HABAylated avidins are red colored in the quinone configuration and can be used in many applications in the avidin-biotin technol. Single-layer and multilayer protein systems were prepared from biotin-saturated HABAylated avidin and biotinylated anti-HABA antibodies.

SUPPL. TERM: avidin conjugate hydroxyazobenzene carboxylate deriv red color; azobenzene deriv streptavidin conjugate; biotin avidin technol HABA conjugate

INDEX TERM: Microtiter plates
(HABAylated avidin attached to; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Glass beads
Plastics, biological studies
ROLE: ARG (Analytical reagent use); BUU (Biological use, unclassified); DEV (Device component use); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(HABAylated avidin attached to; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Hemocyanins
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(HABAylation of; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Affinity chromatography
Biosensors
Immobilization, biochemical
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Magnetic particles
(beads, HABAylated avidin attached to; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Enzymes, analysis
ROLE: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(biotinylated, immobilization and release of; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Ligands
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(biotinylated, immobilization of, on HABAylated avidin column; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Antibodies
ROLE: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(biotinylated, to HABA; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: DNA
ROLE: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); ANST (Analytical study); BIOL (Biological study); PROC (Process)
(capture and release of; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Proteins, specific or class
ROLE: ARG (Analytical reagent use); BPR (Biological

process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(complexes, with ligands, systems containing; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Avidins
ROLE: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(conjugates, with azobenzene derivs.; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Immunoassay
(enzyme-linked immunosorbent assay; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Cell
(immobilization or separation of; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Phage display library
(preparation of; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Albumins, reactions
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(serum, bovine, HABAylation of; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Avidins
ROLE: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(technol. using biotin and; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: Antibodies
ROLE: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); PUR (Purification or recovery); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(to HABA; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **25550-58-7**, Dinitrophenol
ROLE: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(antibody to and HABAylated avidins labeling with; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **98-95-3**, Nitrobenzene, biological studies
99-35-4, Trinitrobenzene

ROLE: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(as low affinity ligand; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **1634-82-8DP**, 4'-Hydroxyazobenzene-2-carboxylic acid, derivs., conjugates with avidins **9013-20-1DP**, Streptavidin, conjugates with azobenzene derivs.
ROLE: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **9012-36-6D**, Sepharose, HABAylated avidin conjugates
ROLE: ARG (Analytical reagent use); BUU (Biological use, unclassified); DEV (Device component use); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **219532-01-1DP**, conjugates with avidins
ROLE: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **219532-01-1P**
ROLE: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **219532-00-0DP**, conjugates with avidins
268544-34-9DP, conjugates with avidins
ROLE: SPN (Synthetic preparation); PREP (Preparation)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **219532-00-0P 268544-34-9P**
ROLE: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(avidins HABAylation with; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **58-85-5D**, Biotin, conjugates with ligand
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(immobilization of, on HABAylated avidin column; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **118-92-3**, Anthranilic acid **552-63-6**, 3-(2-Hydroxyphenyl)propionic acid **583-17-5**, 2-Hydroxycinnamic acid **2780-89-4**, ε-Aminocaproic acid methyl ester **6066-82-6**, N-Hydroxysuccinimide **51857-17-1**
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of avidin conjugate; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **219531-99-4P 268544-18-9P**
268544-19-0P 268544-23-6P
268544-24-7P 268544-30-5P

268544-33-8P 268564-09-6P
ROLE: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of avidin conjugate; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **51-67-2**, Tyramine **61970-08-9**, Sepharose CL-4B **268544-20-3**
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of gel for affinity purification of anti-HABA antibodies; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **61970-08-9DP**, Sepharose CL-4B, activated
ROLE: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of gel for affinity purification of anti-HABA antibodies; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **9012-36-6DP**, Sepharose, HABA functionalized
ROLE: BPR (Biological process); BSU (Biological study, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(preparation of, for affinity purification of anti-HABA antibodies;
avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **7440-57-5**, Gold, uses **7631-86-9**, Silica, uses **9003-53-6**, Polystyrene
ROLE: DEV (Device component use); USES (Uses)
(protein system formed on, as substrate; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **27072-45-3**, FITC
ROLE: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with HABAylated avidins; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

INDEX TERM: **58-85-5**, Biotin
ROLE: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(technol. using avidin and; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

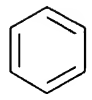
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD.

REFERENCE(S):
(1) Anon; PATENT ABSTRACTS OF JAPAN 1996, V1996(05)
(2) Ebersole, R; US 5182203 A 1993 HCAPLUS
(3) Green, N; METHODS IN ENZYMOLOGY 1990, V184, P51 HCAPLUS
(4) Morpurgo; JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 1998, V120(49), P12734 HCAPLUS
(5) Touin, G; JP 08012699 A 1996 HCAPLUS
(6) Yeda Res & Dev; WO 9700329 A 1997 HCAPLUS

IT **25550-58-7**, Dinitrophenol
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or

reagent)
(antibody to and HABAylated avidins labeling with; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

RN 25550-58-7 HCAPLUS
CN Phenol, dinitro- (8CI, 9CI) (CA INDEX NAME)



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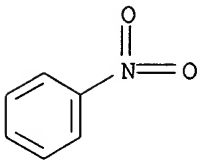
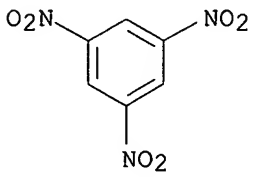
IT **98-95-3**, Nitrobenzene, biological studies **99-35-4**, Trinitrobenzene
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(as low affinity ligand; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

RN 98-95-3 HCAPLUS
CN Benzene, nitro- (8CI, 9CI) (CA INDEX NAME)

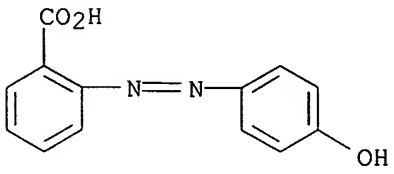


RN 99-35-4 HCAPLUS
CN Benzene, 1,3,5-trinitro- (8CI, 9CI) (CA INDEX NAME)



IT **1634-82-8DP**, 4'-Hydroxyazobenzene-2-carboxylic acid, derivs., conjugates with avidins **9013-20-1DP**, Streptavidin, conjugates with azobenzene derivs.
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES

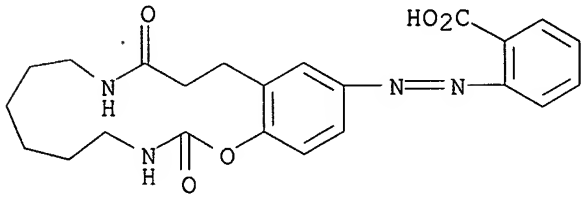
(Uses)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



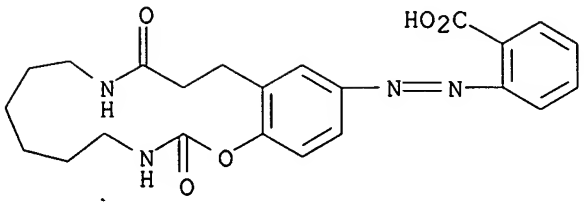
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9012-36-6D**, Sepharose, HABAylated avidin conjugates
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); DEV (Device component use); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 9012-36-6 HCAPLUS
CN Agarose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **219532-01-1DP**, conjugates with avidins
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 219532-01-1 HCAPLUS
CN Benzoic acid, 2-[(2,3,4,5,6,7,8,9,10,11,12,13-dodecahydro-2,11-dioxo-1,3,10-benzoxadiazacyclopentadecin-15-yl)azo]- (9CI) (CA INDEX NAME)

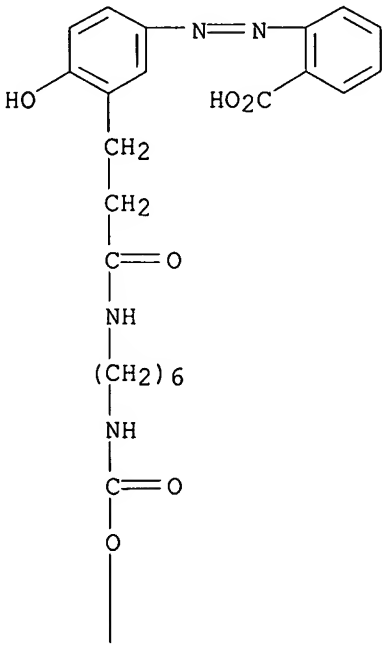


IT **219532-01-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 219532-01-1 HCAPLUS
CN Benzoic acid, 2-[(2,3,4,5,6,7,8,9,10,11,12,13-dodecahydro-2,11-dioxo-1,3,10-benzoxadiazacyclopentadecin-15-yl)azo]- (9CI) (CA INDEX NAME)

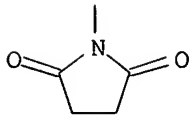


IT **219532-00-0DP**, conjugates with avidins **268544-34-9DP**, conjugates with avidins
RL: SPN (Synthetic preparation); PREP (Preparation)
(avidin derivs. conjugated with 4'-hydroxyyazobenzene-2-carboxylic acids and uses thereof)
RN 219532-00-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

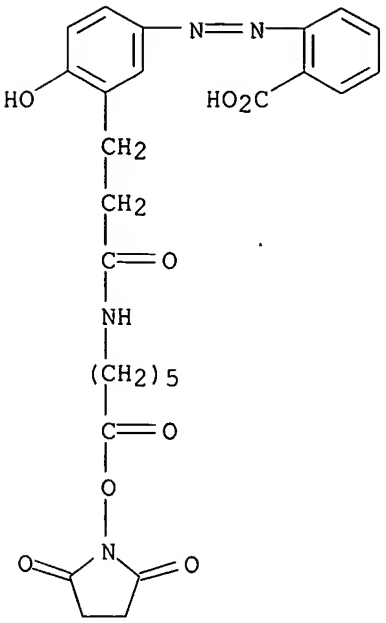
PAGE 1-A



PAGE 2-A

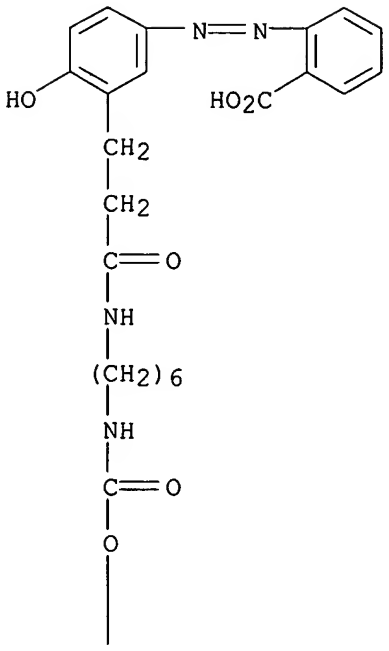


RN 268544-34-9 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

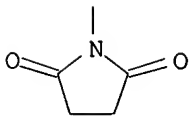


IT **219532-00-0P 268544-34-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(avidins HABAylation with; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 219532-00-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

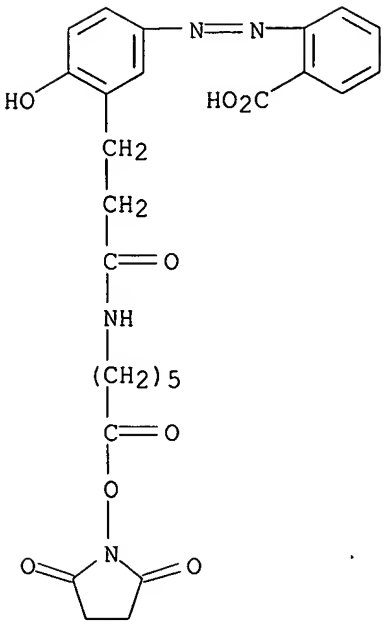
PAGE 1-A



PAGE 2-A

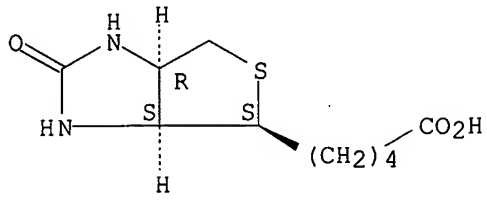


RN 268544-34-9 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

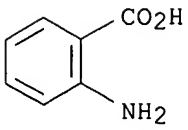


IT **58-85-5D**, Biotin, conjugates with ligand
RL: RCT (Reactant); RACT (Reactant or reagent)
(immobilization of, on HABAylated avidin column; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

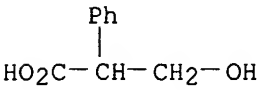
Absolute stereochemistry. Rotation (+).



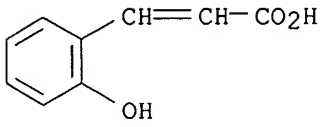
IT **118-92-3**, Anthranilic acid **552-63-6**, 3-(2-Hydroxyphenyl)propionic acid **583-17-5**, 2-Hydroxycinnamic acid **2780-89-4**, ε-Aminocaproic acid methyl ester **6066-82-6**, N-Hydroxysuccinimide **51857-17-1**
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of avidin conjugate; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 118-92-3 HCAPLUS
CN Benzoic acid, 2-amino- (9CI) (CA INDEX NAME)



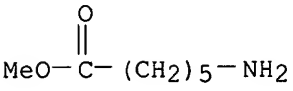
RN 552-63-6 HCAPLUS
CN Benzeneacetic acid, α-(hydroxymethyl)- (9CI) (CA INDEX NAME)



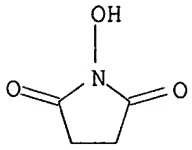
RN 583-17-5 HCAPLUS
CN 2-Propenoic acid, 3-(2-hydroxyphenyl)- (9CI) (CA INDEX NAME)



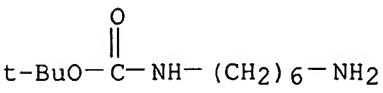
RN 2780-89-4 HCAPLUS
CN Hexanoic acid, 6-amino-, methyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 6066-82-6 HCAPLUS
CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



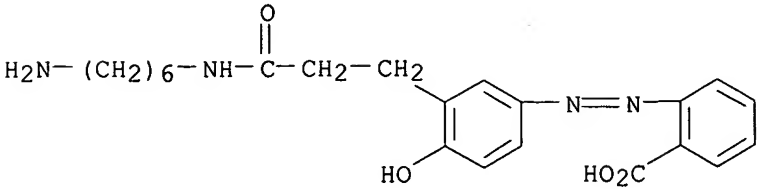
RN 51857-17-1 HCAPLUS
CN Carbamic acid, (6-aminohexyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



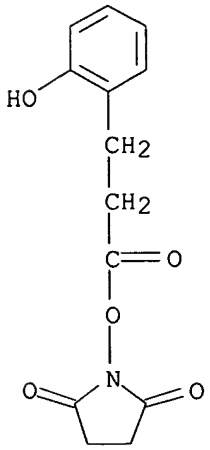
IT **219531-99-4P 268544-18-9P 268544-19-0P 268544-23-6P 268544-24-7P 268544-30-5P**

268544-33-8P 268564-09-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of avidin conjugate; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

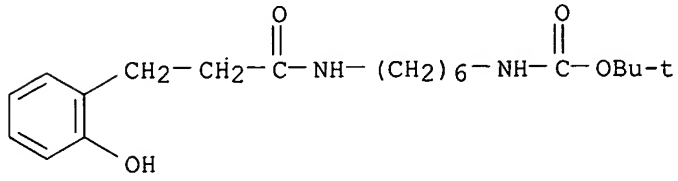
RN 219531-99-4 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



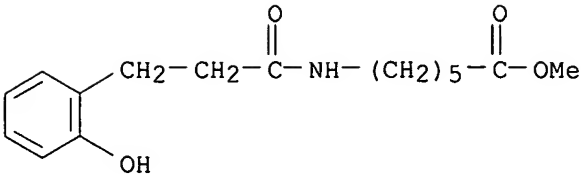
RN 268544-18-9 HCAPLUS
CN 2,5-Pyrrolidinedione, 1-[3-(2-hydroxyphenyl)-1-oxopropoxy]- (9CI) (CA INDEX NAME)



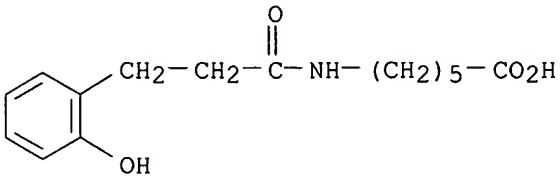
RN 268544-19-0 HCAPLUS
CN Carbamic acid, [6-[[3-(2-hydroxyphenyl)-1-oxopropyl]amino]hexyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



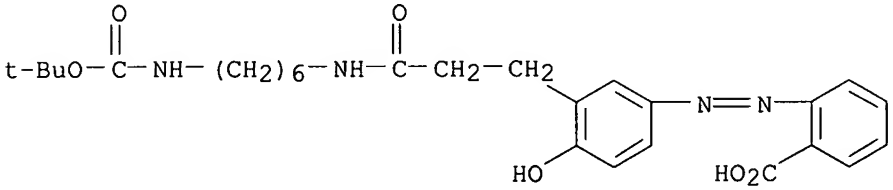
RN 268544-23-6 HCAPLUS
CN Hexanoic acid, 6-[[3-(2-hydroxyphenyl)-1-oxopropyl]amino]-, methyl ester (9CI) (CA INDEX NAME)



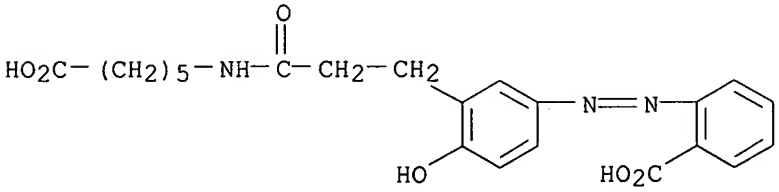
RN 268544-24-7 HCAPLUS
CN Hexanoic acid, 6-[[3-(2-hydroxyphenyl)-1-oxopropyl]amino]- (9CI) (CA INDEX NAME)



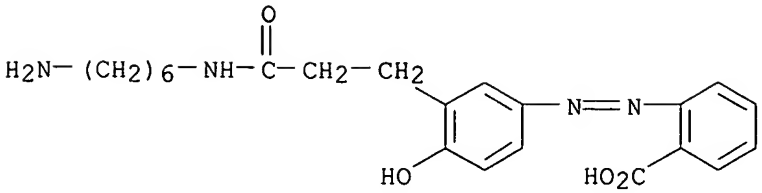
RN 268544-30-5 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[(1,1-dimethylethoxy)carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 268544-33-8 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(5-carboxypentyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

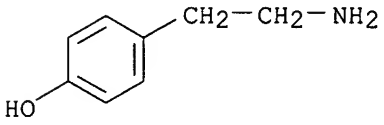


RN 268564-09-6 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]-, monohydrochloride (9CI) (CA INDEX NAME)



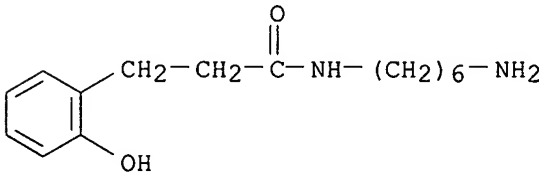
● HCl

IT **51-67-2**, Tyramine **61970-08-9**, Sepharose CL-4B
268544-20-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of gel for affinity purification of anti-HABA antibodies; avidin
derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 51-67-2 HCAPLUS
CN Phenol, 4-(2-aminoethyl)- (9CI) (CA INDEX NAME)



RN 61970-08-9 HCAPLUS
CN Sepharose CL 4B (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 268544-20-3 HCAPLUS
CN Benzenepropanamide, N-(6-aminohexyl)-2-hydroxy- (9CI) (CA INDEX NAME)



IT **61970-08-9DP**, Sepharose CL-4B, activated
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of gel for affinity purification of anti-HABA antibodies; avidin
derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 61970-08-9 HCAPLUS
CN Sepharose CL 4B (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9012-36-6DP**, Sepharose, HABA functionalized
RL: BPR (Biological process); BSU (Biological study, unclassified); NUU

(Other use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(preparation of, for affinity purification of anti-HABA antibodies; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

RN 9012-36-6 HCAPLUS
CN Agarose (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **7440-57-5**, Gold, uses **7631-86-9**, Silica, uses **9003-53-6**, Polystyrene
RL: DEV (Device component use); USES (Uses)
(protein system formed on, as substrate; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

RN 7440-57-5 HCAPLUS
CN Gold (8CI, 9CI) (CA INDEX NAME)

Au

RN 7631-86-9 HCAPLUS
CN Silica (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

O=Si=O

RN 9003-53-6 HCAPLUS
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

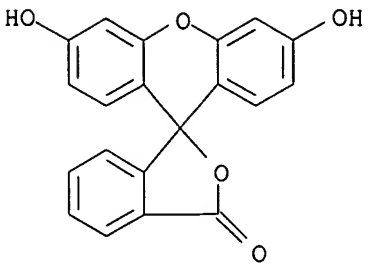
CM 1

CRN 100-42-5
CMF C8 H8

H_2C=CH–Ph

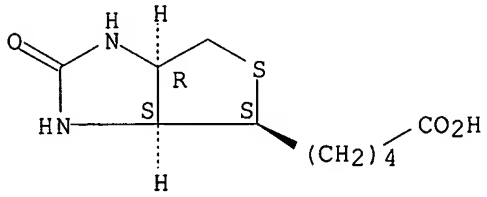
IT **27072-45-3**, FITC
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with HABAylated avidins; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

RN 27072-45-3 HCAPLUS
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy-5(or 6)-isothiocyanato- (9CI) (CA INDEX NAME)



IT **58-85-5**, Biotin
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(technol. using avidin and; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



Considered 08/04/06 MEC

L58 ANSWER 1 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2005:511256 HCAPLUS
DOCUMENT NUMBER: 143:382203
TITLE: Detection of enantiomeric impurities in a simple membrane-based optical immunosensor
AUTHOR(S): Hofstetter, Oliver; Hertweck, Jay K.; **Hofstetter, Heike**
CORPORATE SOURCE: Department of Chemistry and Biochemistry, Northern Illinois University, DeKalb, IL, 60115-2862, USA
SOURCE: Journal of Biochemical and Biophysical Methods (2005), 63(2), 91-99
CODEN: JBBMDG; ISSN: 0165-022X
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Currently available methods for the detection of enantiomeric impurities generally require expensive and sophisticated instrumentation. Here, we describe a simple and inexpensive membrane-based chiral immunosensor that allows quant. determination of chiral analytes up to an enantiomer excess of 99.9%. The exptl. setup is based on a competitive reaction between the analyte and a **biotin**-derivatized analog for the binding sites of a stereoselective **antibody**, which is immobilized onto a membrane. The **antibody**-bound analog is detected with peroxidase-conjugated **avidin** that converts a colorless substrate into an insol. dye on the membrane surface. The color intensity, which is inversely related to the concentration of analyte in a sample, can be evaluated with standard image anal. programs.
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 2 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2004:997797 HCAPLUS
DOCUMENT NUMBER: 142:350709
TITLE: DNA condensation by high-affinity interaction with avidin
AUTHOR(S): **Morpurgo, Margherita**; Radu, Aurelian; **Bayer, Edward A.**; **Wilchek, Meir**
CORPORATE SOURCE: Department of Biological Chemistry, The Weizmann Institute of Science, Rebovot, 76100, Israel
SOURCE: Journal of Molecular Recognition (2004), 17(6), 558-566
CODEN: JMORE4; ISSN: 0952-3499
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Avidin, the basic biotin-binding glycoprotein from chicken egg white, is known to interact with DNA, whereas streptavidin, its neutral non-glycosylated bacterial analog, does not. In the present study we investigated the DNA-binding properties of avidin. Its affinity for DNA in the presence and absence of biotin was compared with that of other pos. charged mols., namely the protein lysozyme, the cationic polymers polylysine and polyarginine and an avidin derivative with higher isoelec. point (pI ≈ 11) in which most of the lysine residues were converted to homoarginines. Gel-shift assays, transmission electron microscopy and dynamic light scattering expts. demonstrated an unexpectedly strong interaction between avidin and DNA. The most pronounced gel-shift retardation occurred with the avidin-biotin complex, followed by avidin alone and then guanidylated avidin. Furthermore,

ultrastructural and light-scattering studies showed that avidin assembles on the DNA mol. in an organized manner. The assembly leads to the formation of nanoparticles that are about 50-100 nm in size (DNA ≈ 5 kb) and have a rod-like or toroidal shape. In these particles the DNA is highly condensed and 1 avidin is bound to each 18 ± 4 DNA base pairs. The complexes are very stable even at high dilution ([DNA] = 10 pM) and are not disrupted in the presence of buffers or salt (≤200 mM NaCl). The other pos. charged mols. also condense DNA and form particles with a globular shape. However, in this case, these particles disassemble by dilution or in the presence of low salt concentration The results indicate that the interaction of avidin with DNA may also occur under physiol. conditions, further enhanced by the presence of biotin. This DNA-binding property of avidin may thus shed light on a potentially new physiol. role for the protein in its natural environment.

REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 3 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2003:146121 HCAPLUS
DOCUMENT NUMBER: 139:97216
TITLE: Structure-based rational design of **streptavidin** mutants with pseudo-catalytic activity
AUTHOR(S): Pazy, Yael; Raboy, Bilha; Matto, Meirav; **Bayer, Edward A.**; **Wilchek, Meir**; Livnah, Oded
CORPORATE SOURCE: The Wolfson Centre for Applied Structural Biology, The Institute of Life Sciences, Department of Biological Chemistry, The Hebrew University of Jerusalem, Jerusalem, 91904, Israel
SOURCE: Journal of Biological Chemistry (2003), 278(9), 7131-7134
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Introduction of enzymic activity into proteins or other types of polymers by rational design is a major objective in the life sciences. To date, relatively low levels of enzymic activity could be introduced into **antibodies** by using transition-state analogs of haptens. In the present study, the authors identify the structural elements that contribute to the observed hydrolytic activity in egg white **avidin**, which promote the cleavage of active **biotin** esters (notably biotinyl p-nitrophenyl ester). The latter elements were then incorporated into bacterial **streptavidin** via genetic engineering. The **streptavidin** mol. was thus converted from a protector to an enhancer of hydrolysis of **biotin** esters. The conversion was accomplished by the combined replacement of a "lid-like loop" (L3,4) and a leucine-to-arginine point mutation in **streptavidin**. Interestingly, neither of these elements play a direct role in the hydrolytic reaction. The latter features were thus shown to be responsible for enhanced substrate hydrolysis. This work indicates that structural and noncatalytic elements of a protein can be modified to promote the induced fit of a substrate for subsequent interaction with either a catalytic residue or water mols. This approach complements the conventional design of active sites that involves direct modifications of catalytic residues.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 4 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 2003:82799 HCAPLUS
DOCUMENT NUMBER: 138:316388
TITLE: Rational Design of an Active **Avidin** Monomer
AUTHOR(S): Laitinen, Olli H.; Nordlund, Henri R.; Hytoenen, Vesa P.; Uotila, Sanna T. H.; Marttila, Ari T.; Savolainen, Janne; Airenne, Kari J.; Livnah, Oded; **Bayer, Edward A.; Wilchek, Meir**; Kulomaa, Markku S.
CORPORATE SOURCE: Department of Biological and Environmental Science, University of Jyvaeskylae, FIN-40014, Finland
SOURCE: Journal of Biological Chemistry (2003), 278(6), 4010-4014
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Homotetrameric chicken **avidin** that binds four mols. of **biotin** was converted to a monomeric form (monoavidin) by mutations of two interface residues: tryptophan 110 in the 1 → 2 interface was mutated to lysine and asparagine 54 in the 1 → 4 interface was converted to alanine. The affinity for **biotin** binding of the mutant decreased from Kd .apprx.10-15 M of the wild-type tetramer to Kd .apprx.10-7 M, which was studied by an optical biosensor IAsys and by a fluorescence spectroscopical method in solution The binding was completely reversible. Conversion of the tetramer to a monomer results in increased sensitivity to proteinase K digestion. The antigenic properties of the mutated protein were changed, such that monoavidin was only partially recognized by a polyclonal **antibody** whereas two different monoclonal **antibodies** entirely failed to recognize the **avidin** monomer. This new monomeric **avidin**, which binds **biotin** reversibly, may be useful for applications both in vitro and in vivo. It may also shed light on the effect of intersubunit interactions on the binding of ligands.
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 5 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 2000:605303 HCAPLUS
DOCUMENT NUMBER: 134:39075
TITLE: A Labeling, Detection, and Purification System Based on 4-Hydroxyazobenzene-2-carboxylic Acid: An Extension of the **Avidin-Biotin** System
AUTHOR(S): **Hofstetter, Heike; Morpurgo, Margherita**; Hofstetter, Oliver; **Bayer, Edward A.; Wilchek, Meir**
CORPORATE SOURCE: Department of Biological Chemistry, Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Analytical Biochemistry (2000), 284(2), 354-366
CODEN: ANBCA2; ISSN: 0003-2697
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We introduce a new nonradioactive, chromogenic label based on 4-hydroxyazobenzene-2-carboxylic acid (**HABA**), which is suitable for bioanal. application, e.g., detection, localization, isolation, and

purification The **HABA** label is superior to other systems where it is difficult to sep. labeled from unlabeled mols. or to determine the amount of label. **HABA** is readily detected spectroscopically by its absorption at 350 nm or by its interaction with **avidin** that results in a red shift to 500 nm. The **HABA** reagents described can be conjugated to a variety of functional groups on biomols. and purified thereafter by affinity chromatog. on an **avidin** column. The interaction of the HABAylated biomols. with their corresponding targets is detected with high-affinity anti-**HABA** **antibodies** or with **avidin**. The nonradioactive, chromogenic **HABA**-based reagents form a homogeneous system that can complement or replace systems where facile quantification of the label is desired. (c) 2000 Academic Press.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 6 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 7

ACCESSION NUMBER: 1998:780980 HCAPLUS
DOCUMENT NUMBER: 130:311521
TITLE: N-hydroxysuccinimide carbonates and carbamates are useful reactive reagents for coupling ligands to lysines on proteins
AUTHOR(S): **Morpurgo, Margherita; Bayer, Edward A.; Wilchek, Meir**
CORPORATE SOURCE: Department of Biological Chemistry, The Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Journal of Biochemical and Biophysical Methods (1999), 38(1), 17-28
CODEN: JBBMDG; ISSN: 0165-022X
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 130:311521

AB Ligands containing amino or hydroxyl groups were converted to their corresponding activated N-hydroxy-succinimidyl carbamate and carbonate by reaction with disuccinimidyl carbonate (DSC). The latter reagents can be used for the group-specific modification of primary amines as an alternative to the widespread usage of N-hydroxy-succinimide esters. Biotin and 2,4-dinitrophenyl (DNP) derivs. were used as examples to demonstrate the approach. Biotin and DNP were each extended by attaching two different spacer arms, carrying either a hydroxyl group or a primary amine as terminal functions. The latter were then activated via their conversion to N-hydroxy-succinimide carbonates and carbamates, resp. The usefulness of these reagents for protein modification was investigated. The modified proteins obtained exhibited similar stability and activity characteristics compared to those modified with active N-hydroxy-succinimidyl esters. The activation of hydroxy- or amino-terminating compds. with DSC represents a general method that can be applied to any ligand which contains these functional groups for its covalent coupling to amines.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 7 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 8

ACCESSION NUMBER: 1998:749838 HCAPLUS
DOCUMENT NUMBER: 130:91738
TITLE: A Chemical Approach To Illustrate the Principle of Signal Transduction Cascades Using the **Avidin** **-Biotin** System

AUTHOR(S): **Morpurgo, Margherita; Hofstetter, Heike; Bayer, Edward A.; Wilchek, Meir**
CORPORATE SOURCE: Department of Biological Chemistry, The Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Journal of the American Chemical Society (1998), 120(49), 12734-12739
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new approach to illustrate the principle of signal transduction and to assemble protein multilayers is described. It is based on competing affinities of two different ligands for the same binding site of a protein. A low-affinity ligand can be attached covalently to the protein, where it will be buried in the binding site and thus be prevented to interact with other proteins that recognize it. However, if a high-affinity ligand (or a mol. containing this ligand) is added, it will displace the low-affinity ligand (which still remains covalently bound) from the binding site to the periphery. The low-affinity ligand is now available for interaction with other mols., thus providing the means through which to assemble multilayers of proteins by a recognition cascade. This principle was demonstrated using the protein **avidin** which binds two ligands, **biotin** and 4-hydroxyazobenzene-2-carboxylic acid (**HABA**), with markedly different affinities. **Avidin** was affinity labeled with **HABA**, the low-affinity ligand, to produce a red, covalently conjugated **avidin**-**HABA** derivative (red **avidin**). Anti-**HABA** **antibodies** failed to recognize **HABA** buried in the binding site of **avidin**. However, upon addition of the high-affinity ligand **biotin**, **HABA** was expelled from the binding site and immediately bound by the **antibodies**. Multilayer assemblies of HABAylated **avidin** and biotinylated anti-**HABA** **antibodies** could thus be constructed. BThis concept may find application in numerous fields, such as medicine, diagnostics, nanotechnol., and artificial intelligence.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 8 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 9
ACCESSION NUMBER: 1997:595722 HCAPLUS
DOCUMENT NUMBER: 127:261414
TITLE: Preparation and properties of anti-**biotin** **antibodies**
AUTHOR(S): Kohen, Fortune; Bagci, Hasan; Barnard, Geoff; **Bayer, Edward A.**; Gayer, Batya; Schindler, Daniel G.; Ainbinder, Elena; **Wilchek, Meir**
CORPORATE SOURCE: USA
SOURCE: Methods in Enzymology (1997), 279(Vitamins and Coenzymes, Part I), 451-463
CODEN: MENZAU; ISSN: 0076-6879
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors have studied **avidin-biotin** technol. for immunoassays in order to try to decrease the nonspecific binding properties. A high-affinity monoclonal **antibody** to **biotin** was produced. Comparison of the VH sequence of the anti-**biotin** **antibody** with those of **avidin** and

streptavidin revealed a similarity in the CDR2 and CDR3 regions of the **antibody** with known **biotin**-binding motifs in 2 of the homologous stretches of **avidin** and **streptavidin**. The VL sequence showed no similarity to such stretches of **avidin** or **streptavidin**. In one type assay, the resp. **biotin** -binding proteins served as an europium-labeled detection system (for human growth hormone assay), and in the other, as capture proteins for immobilizing the desired biotinylated **antibody** (in an estradiol assay). The results demonstrate that the anti-**biotin** monoclonal **antibody** is an excellent substitute for **streptavidin** -based immunoassays and provides an alternative probe for **avidin** -**biotin** technol.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 9 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 10
ACCESSION NUMBER: 1993:619897 HCAPLUS
DOCUMENT NUMBER: 119:219897
TITLE: The structure of the complex between avidin and the dye, 2-(4'- hydroxyazobenzene) benzoic acid (**HABA**)
AUTHOR(S): Livnah, Oded; **Bayer, Edward A.**; **Wilchek, Meir**; Sussman, Joel L.
CORPORATE SOURCE: Structural Biology and, Rehovot, 76100, Israel
SOURCE: FEBS Letters (1993), 328(1-2), 165-8
CODEN: FEBLAL; ISSN: 0014-5793
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The crystal structure of the complex formed between the egg-white **biotin**-binding protein, **avidin**, and the dye, 2-(4'-hydroxyazobenzene) benzoic acid (**HABA**), was determined to a resolution of 2.5 Å. The interaction of **avidin** with the benzoate ring of **HABA** is essentially identical to that of the complex formed between **HABA** and **streptavidin** (the bacterial analog of the egg-white protein). This interaction emulates the definitive high-affinity interaction of both proteins with the ureido moiety of **biotin**. The major difference between the **avidin**- and **streptavidin**-**HABA** complexes lies in their interaction with the hydroxyphenyl ring of the dye mol.; in **avidin**, two adjacent amino acid residues (Phe72 and Ser73), which are not present in **streptavidin**, form addnl. interactions with this ring. These are suggested to account for the higher affinity of **avidin** for **HABA**. The characteristic red shift, which accompanies the interaction of both proteins with the dye, was traced to a proposed charge-transfer complex formed between the hydroxyphenyl ring of **HABA** and the indole ring of Trp70 in **avidin** (Trp79 in **streptavidin**). Comparison of binding site residues of two such similar proteins vs. their markedly different affinities for two such different substrates should eventually contribute to a better design of biomimetic reagents and drugs.

L58 ANSWER 10 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 11
ACCESSION NUMBER: 1993:623625 HCAPLUS
DOCUMENT NUMBER: 119:223625
TITLE: Affinity cleavage of cell surface **antibodies** using the **avidin-biotin** system
AUTHOR(S): Alon, Ronen; **Bayer, Edward A.**; **Wilchek, Meir**
CORPORATE SOURCE: Department of Biophysics, The Weizmann Institute of

Science, Rehovot, 76100, Israel
SOURCE: Journal of Immunological Methods (1993), 165(1), 127-34
CODEN: JIMMBG; ISSN: 0022-1759
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In the present study, the authors have demonstrated the feasibility of targeting a proteolytic enzyme, via the high-affinity **avidin-biotin** system, to act in a highly selective manner upon a cell surface-associated **antibody**. As an example of this approach, a cell-bound biotinylated monoclonal **antibody** could be removed efficiently by biotinylated proteinase K, bridged to **streptavidin**. Only low levels of cell death were observed using this procedure. The approach may prove useful for a variety of applications, including the recovery of **antibody**-free pos. selected cell populations.

L58 ANSWER 11 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 12
ACCESSION NUMBER: 1993:470025 HCAPLUS
DOCUMENT NUMBER: 119:70025
TITLE: Monoclonal anti-**biotin antibodies** simulate **avidin** in the recognition of **biotin**
AUTHOR(S): Bagci, Hasan; Kohen, Fortune; Kuscuoglu, Unsal; **Bayer, Edward A.**; **Wilchek, Meir**
CORPORATE SOURCE: Hormone Research and, Rehovot, 76100, Israel
SOURCE: FEBS Letters (1993), 322(1), 47-50
CODEN: FEBLAL; ISSN: 0014-5793
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The sequence of the VH gene of a monoclonal anti-**biotin antibody** was determined **Biotin**-binding motifs, similar to those in **avidin** and **streptavidin**, were identified in complementarity determining regions 2 and 3, suggesting that natural selection of functional motifs may occur in unrelated protein types.

L58 ANSWER 12 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 13
ACCESSION NUMBER: 1992:604677 HCAPLUS
DOCUMENT NUMBER: 117:204677
TITLE: Cytotoxicity of **streptavidin**-blocked biotinyl-ricin is retrieved by in vitro immunotargeting via biotinyl monoclonal **antibody**
AUTHOR(S): Schechter, Bilha; Arnon, Ruth; **Wilchek, Meir**
CORPORATE SOURCE: Dep. Chem. Immunol., Weizmann Inst. Sci., Rehovot, 76100, Israel
SOURCE: Cancer Research (1992), 52(16), 4448-52
CODEN: CNREA8; ISSN: 0008-5472
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **streptavidin-biotin** system has been used to immunotarget whole ricin to tumor cells in a system that overcomes ricin-nonspecific cytotoxicity. **Biotin** was linked to ricin via a disulfide-containing reagent, sulfosuccinimidyl-2-(biotinamido)ethyl-1,3'-dithiopropionate. The product, biotinyl-S,S-ricin (b-ricin), retained most of its in vitro cytotoxic activity against human epidermoid carcinoma (KB) cells. Complexing b-ricin to **streptavidin** resulted in >99% loss of its cellular toxicity which is associated with loss of cell-binding activity. The **streptavidin**-b-ricin complex could, however, be targeted to KB cells via the biotinylated monoclonal **antibody**

108 which is specific to the epidermal growth factor receptor overexpressed on KB cells. The complex did not regain its activity if the specific **antibody** was not biotinylated or if the biotinylated **antibody** was of a different specificity. **Streptavidin** is thus used to block b-ricin, presumably due to a steric restraint of the **streptavidin** on the ricin B-chain, and to bridge it to biotinyl **antibody** recognizing the target cell. **Avidin** could not replace **streptavidin** in this system since a complex between b-ricin and **avidin** retained a major part (60%) of ricin cytotoxic activity. This is attributed to the nonspecific binding of **avidin** to cells in vitro, including the KB cells. It is suggested that b-ricin is blocked by both **streptavidin** and **avidin** , but once the complex gains access to the cell surface, its cytotoxic activity is specifically retrieved.

L58 ANSWER 13 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 14
ACCESSION NUMBER: 1992:628685 HCAPLUS
DOCUMENT NUMBER: 117:228685
TITLE: Cell-adhesive properties of **streptavidin** are mediated by the exposure of an RGD-like RYD site
AUTHOR(S): Alon, Ronen; **Bayer, Edward A.**; **Wilchek, Meir**
CORPORATE SOURCE: Dep. Biophys., Weizmann Inst. Sci., Rehovot, 76100, Israel
SOURCE: European Journal of Cell Biology (1992), 58(2), 271-9
CODEN: EJCBDN; ISSN: 0171-9335
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The interaction of **streptavidin** with various cell systems was studied using fluorescent derivs. of the protein. The native unprocessed form of **streptavidin** bound to cells at low levels and in a nonspecific manner. In contrast, both the truncated core **streptavidin** (the com. available form) and the **biotin** -blocked unprocessed protein bound to cells in enhanced levels and in a specific, saturable manner. This suggests that the binding of **biotin** or cleavage of the terminal portion(s) of the native protein mol. causes conformational changes which lead to the exposure of sites which presumably interact with cell surface receptors. Peptide inhibition studies demonstrated that the majority of binding to cells appears to be dependent on RGD-like specificity, suggesting that the GRYDS sequence of the **streptavidin** mol. may exhibit such specificity. Indirect immunofluorescence assays revealed that the protein is associated mainly with the cell surface. Moreover, **streptavidin** was demonstrated to compete with specific monoclonal **antibodies** to the RGD-binding site on the GpIIbIIIa integrin of activated platelets, thus suggesting that **streptavidin** may facilitate binding to ubiquitous cell-surface adhesion receptors via RGD mimicry.

L58 ANSWER 14 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 15
ACCESSION NUMBER: 1991:484932 HCAPLUS
DOCUMENT NUMBER: 115:84932
TITLE: Indirect immunotargeting of cis-platinum to human epidermoid carcinoma KB using the **avidin-biotin** system
AUTHOR(S): Schechter, B.; Arnon, R.; **Wilchek, M.**; Schlessinger, J.; Aboud-Pirak, E.; Sela, M.
CORPORATE SOURCE: Dep. Chem. Immunol., Weizmann Inst. Sci., Rehovot, 76100, Israel
SOURCE: International Journal of Cancer (1991), 48(2), 167-72

CODEN: IJCNAW; ISSN: 0020-7136
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Cis-diamminedichloroplatinum(II) (cis-Pt) complexed to a carboxymethyl dextran-**avidin** conjugate was targeted to **biotin** -monoclonal **antibody** 108 (b-MAb108). This MAb recognizes the extracellular domain of the epidermal growth factor receptor (EGF-R) on human epidermoid carcinoma (KB) cells over-expressing EGF-R. Cis-Pt-carboxymethyl-dextran-**avidin** (Pt-dex-Av) containing 60-90M cis-Pt/M **avidin** was administered 24 h following b-MAb108 containing 3-5M **biotin**/M MAb. This treatment was potentially more effective in suppressing the growth of established KB tumor xenografts, or in inhibiting the development of lung metastases in nude mice, than free MAb108, free drug or MAb108 followed by drug. Replacing b-MAb108 by unbiotinylated **antibody** or by b-MAb of a different specificity also yielded lower suppressive effects. The sequential administration of Pt-dex-Av following b-MAb was more effective than introduction of the Pt-dex-Av when already complexed to b-MAb108. The results presented in this preliminary investigation suggest that Pt-dex-Av is specifically removed from the circulation by b-MAb108 concentrated at the tumor site.

L58 ANSWER 15 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 16
ACCESSION NUMBER: 1990:626930 HCAPLUS
DOCUMENT NUMBER: 113:226930
TITLE: Affinity cleavage and targeted catalysis of proteins using the **avidin-biotin** system
AUTHOR(S): **Bayer, Edward A.**; Grootjans, Johan; Alon, Ronen; **Wilchek, Meir**
CORPORATE SOURCE: Dep. Biophys., Weizmann Inst. Sci., Rehovot, 76100, Israel
SOURCE: Biochemistry (1990), 29(51), 11274-9
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The **avidin-biotin** system was used in order to target enzymes to their substrates in complex mixts. of proteins in solution The approach described here thus mimics natural systems in which enzymes usually act in selective fashion, due, perhaps, to proximity effects. For affinity cleavage studies, biotinyl transferrin was used as a model target substrate. **Avidin** or **streptavidin** was then employed to bridge between the biotinylated target protein and a biotinyl protease. Bovine serum albumin was included in the reaction mixts. to assess the level of nonspecific cleavage. In the case of an unbiotinylated target protein, **avidin** could be used to inhibit the hydrolytic action of the biotinyl protease. In some systems, a biotinyl **antibody** could be used to direct the **avidin**-bridged biotinyl protease to an unbiotinylated target antigen. The data support the contention that preferential cleavage reflects 2 sep. phenomena: (1) **avidin** confers a conformational alteration of the biotinylated target protein, and (2) the biotinyl protease is targeted (via the **avidin** bridge) to the proximity of the biotinylated target protein, thereby promoting cleavage of the conformationally altered mol. This is the 1st report in which a proteolytic enzyme could be selectively targeted to specifically hydrolyze a defined protein substrate in solns. containing a complex mixture of other proteins. The approach appears to be a general phenomenon for targeted catalysis, applicable to other nonproteolytic enzyme systems. The approach is also appropriate for other applications, particularly for affinity cleavage and targeted catalysis of cell-based macromols.

L58 ANSWER 16 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 17
ACCESSION NUMBER: 1991:445350 HCAPLUS
DOCUMENT NUMBER: 115:45350
TITLE: **Avidin** column as a highly efficient and stable alternative for immobilization of ligands for affinity chromatography
AUTHOR(S): **Bayer, Edward A.; Wilchek, Meir**
CORPORATE SOURCE: Dep. Biophys., Weizmann Inst. Sci., Rehovot, 76100, Israel
SOURCE: Journal of Molecular Recognition (1990), 3(3), 102-7
CODEN: JMORE4; ISSN: 0952-3499
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **avidin/biotin** system was applied as a general mediator in the adsorption/desorption or immobilization of biol. active macromols. to solid supports. In this context, model biotinylated proteins (lectins and **antibodies**) were attached to **avidin**-coupled Sepharose. As examples for affinity chromatog., peanut agglutinin and anti-transferrin **antibody** were used to isolate asialofetuin and transferrin, resp. The capacity and product yields were significantly better than those achieved with conventional affinity chromatog. on CNBr-activated Sepharose columns containing the same lectin or **antibody**. Moreover, the columns were characterized by improved stability properties exhibiting remarkably low levels of leakage.

L58 ANSWER 17 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 18
ACCESSION NUMBER: 1988:210117 HCAPLUS
DOCUMENT NUMBER: 108:210117
TITLE: Use of **avidin-biotin** technology for liposome targeting
AUTHOR(S): Rivnay, B.; **Bayer, E. A.; Wilchek, M.**
CORPORATE SOURCE: Dep. Membr. Res., Weizmann Inst. Sci., Rehovot, 76100, Israel
SOURCE: Methods in Enzymology (1987), 149(Drug Enzyme Targeting, Pt. B), 119-23
CODEN: MENZAU; ISSN: 0076-6879
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An improved synthesis and purification scheme for biotinylated phospholipids, in particular biotinylphosphatidylethanolamine and biotinylphosphatidylserine, for preparation of targetable liposomes are presented. Using biotinylated phospholipids, a selective mode of liposome-cell interaction is obtained. Use of a biotinylated lipid with the required phys. properties might result in successful introduction of drugs to kill tumor cells.

L58 ANSWER 18 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 19
ACCESSION NUMBER: 1987:490128 HCAPLUS
DOCUMENT NUMBER: 107:90128
TITLE: Amplified bioluminescence assay using **avidin -biotin** technology
AUTHOR(S): Barnard, G.; **Bayer, E. A.; Wilchek, M.**; Amir-Zaltsman, Y.; Kohen, F.
CORPORATE SOURCE: Med. Sch., King's Coll., London, SE5 8RX, UK
SOURCE: Methods in Enzymology (1986), 133(Biolumin. Chemilumin., Pt. B), 284-8
CODEN: MENZAU; ISSN: 0076-6879

DOCUMENT TYPE: Journal
LANGUAGE: English
AB The high affinity of **avidin** for **biotin** was used to amplify an immunoassay for human chorionic gonadotropin (hCG). Thus, a monoclonal or polyclonal **antibody** to hCG is immobilized onto a solid matrix. The antigen is added followed by a biotinylated **antibody** directed against a 2nd epitope on the antigen. After the immunol. reaction, a secondary probe of **avidin** and biotinylated glucose 6-phosphate dehydrogenase is added. The endpoint is determined by bioluminescence with glucose 6-phosphate and NAD+ as substrates and bacterial luciferase/FMN/decanal for initiation of light output. The sensitivity of the assay is 15 mIU/mL which indicates its usefulness in the detection of preganacy since the threshold value for pregnancy is 50 mIU/mL. The measurement of hCG by this method gave an excellent correlation with values determined by RIA.

L58 ANSWER 19 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 20
ACCESSION NUMBER: 1981:546448 HCAPLUS
DOCUMENT NUMBER: 95:146448
TITLE: The **avidin-biotin** complex in solid phase radioimmunoassays
AUTHOR(S): **Wilchek, Meir**
CORPORATE SOURCE: Dep. Biophys., Weizmann Inst. Sci., Rehovot, Israel
SOURCE: Journal of Solid-Phase Biochemistry (1980), 5(4), 193-5
CODEN: JSBIDL; ISSN: 0146-0641
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A solid-phase radioimmunoassay is described in which **biotin** -conjugated **antibodies** are used to replace 125I-labeled **antibodies** to individual antigens. The amount of antigen present is subsequently determined by the binding of 125I-labeled **avidin**. This method is appealing for a variety of reasons. Only 1 125I-labeled protein (**avidin**) need be prepared and characterized for all affinity systems. There is no need to purify individual **antibodies**. **Biotin** can be attached to **antibodies** under mild conditions. The size, phys. characteristics, and biol. activity of the **biotin**-derived **antibody** are only nominally affected. The **biotin-avidin** complex is of exceptionally high affinity and stability. Introduction of **biotin** groups into the **antibodies** leads to amplified radioactive tracer binding. **Avidin** and **biotin** are com. available.

L58 ANSWER 20 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 22
ACCESSION NUMBER: 1976:134051 HCAPLUS
DOCUMENT NUMBER: 84:134051
TITLE: A chemical approach for the localization of membrane sites involved in lymphocyte activation
AUTHOR(S): Wynne, David; **Wilchek, Meir**; Novogrodsky, Abraham
CORPORATE SOURCE: Dep. Biophys., Weizmann Inst. Sci., Rehovot, Israel
SOURCE: Biochemical and Biophysical Research Communications (1976), 68(3), 730-9
CODEN: BBRCA9; ISSN: 0006-291X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The aldehyde groups formed on periodate oxidation of cell surface sialyl residues were used to insert a mitogenic site onto the lymphocyte membrane by attachment of **biotin** hydrazide or 2,4-dinitrophenyl (DNP)

hydrazine. The **biotin**- or DNP-conjugated cells were both agglutinated and stimulated when cultured with **avidin** or anti-DNP **antibody** resp. Whereas, **biotin** or DNP-conjugated cells, modified via functional groups on the membrane proteins, were agglutinated but not stimulated when cultured with **avidin** or anti-DNP **antibody** resp. Results showed that the specific interaction of a protein at the periodate oxidation site led to blastogenesis.

L58 ANSWER 21 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 23
ACCESSION NUMBER: 1977:41601 HCAPLUS
DOCUMENT NUMBER: 86:41601
TITLE: Affinity cytochemistry: the localization of lectin and **antibody** receptors on erythrocytes via the **avidin-biotin** complex
AUTHOR(S): **Bayer, Edward A.; Wilchek, Meir;** Skutelsky, Ehud
CORPORATE SOURCE: Dep. Biophys., Weizmann Inst. Sci., Rehovot, Israel
SOURCE: FEBS Letters (1976), 68(2), 240-4
CODEN: FEBLAL; ISSN: 0014-5793
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Ferritin-**avidin** conjugates (FAv) were used for the visualization of concanavalin A (Con A), peanut agglutinin (PNA), and **antibody** receptor sites on erythrocytes. The method involves: (a) covalent attachment of **biotin** to the desiired binding protein; (b) incubation of the **biotin** conjugate with the appropriate cells; followed by (c) incubation with FAv so that the cell surface receptors can be visualized by electron microscopy. The amount of **biotin** derivatized to the protein (e.g., Con A) should be sufficient to react with **avidin**, and not so much as to disturb the binding of the protein to its receptor. **Biotin** derivatized protein was prepared by mixing BNHS (biotinyl-N-hydroxy succinimide ester) with Con A for 4 hr at room temperature Cell surface receptors on rabbit, mouse, or human erythrocytes were labeled, after rinsing with VBS (veronal-acetate-saline), fixation at room temperature with glutaraldehyde in VBS, then incubation with the appropriate solution of biotinyl-lectin (B-lectin) or biotinyl-goat γ-globulin vs. rabbit erythrocyte membrane or biotinyl-antiserum vs. mouse erythrocyte membrane. After labeling, the cells were washed, treated with FAv for 15 min at room temperature, then fixed with glutaraldehyde and processed for electron microscopy. Thus, only 1 ferritin-protein conjugate (FAv) needs to be prepared and characterized for all affinity systems; **biotin** can be attached to small ligands and macromols. efficiently under very mild conditions, and the size, phys. characteristics, and biol. activity of the **biotin**-derivatized proteins examined are only nominally affected.

L58 ANSWER 22 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:109762 HCAPLUS
DOCUMENT NUMBER: 144:365555
TITLE: Essentials of biorecognition: The (strept) **avidin-biotin** system as a model for protein-protein and protein-ligand interaction
AUTHOR(S): **Wilchek, Meir; Bayer, Edward A.;** Livnah, Oded
CORPORATE SOURCE: Department of Biological Chemistry, The Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Immunology Letters (2006), 103(1), 27-32
CODEN: IMLED6; ISSN: 0165-2478

PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Mol. recognition or biorecognition is as the heart of all biol. interactions. These interactions are characterized by a collection of noncovalent bonds, namely ionic, hydrogen-bonding and hydrophobic interactions. In addition, shape complementarity appears to play a pivotal role in the process of biorecognition. In this review, the authors examine the versatile **avidin-biotin** complex as a model system for study of the biorecognition phenomenon with respect to protein-protein, protein-peptide, protein-ligand and protein-DNA interactions.
REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 23 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:473010 HCAPLUS
DOCUMENT NUMBER: 143:129401
TITLE: Versatile protein microarray based on carbohydrate-binding modules
AUTHOR(S): Ofir, Keren; Berdichevsky, Yevgeny; Benhar, Itai; Azriel-Rosenfeld, Ronit; Lamed, Raphael; Barak, Yoav; **Bayer, Edward A.**; Morag, Ely
CORPORATE SOURCE: Zephyr ProteomiX, Kiryat-Shmona, Israel
SOURCE: Proteomics (2005), 5(7), 1806-1814
CODEN: PROTC7; ISSN: 1615-9853
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Non-DNA microarrays, such as protein, peptide and small mol. microarrays, can potentially revolutionize the high-throughput screening tools currently used in basic and pharmaceutical research. However, fundamental obstacles remain that limit their rapid and widespread implementation as an alternative bioanal. approach. These include the prerequisite for numerous proteins in active and purified form, ineffectual immobilization strategies and inadequate means for quality control of the considerable nos. of multiple reagents. This study describes a simple yet efficient strategy for the production of non-DNA microarrays, based on the tenacious affinity of a carbohydrate-binding module (CBM) for its three-dimensional substrate, i.e., cellulose. Various microarray formats are described, e.g., conventional and single-chain **antibody** microarrays and peptide microarrays for serodiagnosis of human immunodeficiency virus patients. CBM-based microarray technol. overcomes many of the previous obstacles that have hindered fabrication of non-DNA microarrays and provides a tech. simple but effective alternative to conventional microarray technol.
REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 24 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:227874 HCAPLUS
TITLE: Biorecognition and its manifold applications
AUTHOR(S): **Wilchek, Meir**; Miron, Talia; **Bayer, Edward A.**
CORPORATE SOURCE: Dep. Biological Chem., Weizmann Inst. Sci., Rehovot, Israel
SOURCE: Khimiya beYisra'el (2005), 20, 23-31
CODEN: KHBEFD
PUBLISHER: S.N.ER. Communications Ltd.

DOCUMENT TYPE: Journal
LANGUAGE: English
AB In this article, we describe four different applications of biorecognition, which are leading techniques in mol. biol., medicine, diagnostics and nanotechnol. 1) Affinity chromatog. is a method for purification of biol. active mols., based on biol. interaction rather than their chemical or phys. properties. It opened the door for modem-day biol. and biotechnol. by providing readily purified materials for research and use. 2) Affinity labeling is a method for determining the identity of binding-residues of a protein even without knowing its structure. This procedure enables the development of irreversible inhibitors to enzymes and the development of new drugs. 3) Affinity therapy involves the binding of a drug to a carrier mol., which delivers the conjugate to a target cell using the carrier-receptor interaction. Examples of this approach are currently in the process of preclin. evaluation, particularly using **antibodies** against specific markers on cancer cells. 4) The **avidin-biotin** system applies the high-affinity interaction of the glycoprotein **avidin** (or its bacterial relative **streptavidin**) with the vitamin **biotin**, and is used as a mediator in all of the above-mentioned methods. It is an indispensable tool for diagnostics, biotechnol. and nanotechnol.
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 25 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:72703 HCAPLUS
DOCUMENT NUMBER: 136:123599
TITLE: Modified **avidin**-type molecules as targeting agents for the liver and cells of the reticuloendothelial system
INVENTOR(S): Schechter, Bilha; Arnon, Ruth; **Wilchek, Meir**
PATENT ASSIGNEE(S): Yeda Research and Development Co., Ltd., Israel
SOURCE: U.S. Pat. Appl. Publ., 31 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002009416	A1	20020124	US 1998-100015	19980619
US 6638508	B2	20031028		
WO 9722879	A1	19970626	WO 1996-US20333	19961220

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: IL 1995-116500 A 19951221
WO 1996-US20333 A2 19961220

AB The present invention relates to **avidin**-type mols. having 2,4,6-trinitrophenyl or lactosyl groups or being complexed with an **antibody** specific to the **avidin**-type mol., which shifts the biodistribution pattern in tissues and organs to the liver, where these mols. accumulate at high levels over several days. These modified

avidin-type mols. provide a means for delivery of diagnostic and therapeutic agents, including radionuclides to the liver and cells of the reticuloendothelial system (RES) for diagnosing and treating hepatic disorders and disorders of the RES.

L58 ANSWER 26 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:335383 HCAPLUS
DOCUMENT NUMBER: 132:345164
TITLE: **Avidin** derivatives conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof
INVENTOR(S): **Wilchek, Meir; Bayer, Edward A.; Morpurgo, Margherita; Hofstetter, Heike**
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel
SOURCE: PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000027814	A1	20000518	WO 1999-IL605	19991110
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6632929	B1	20031014	US 2001-831499	20010807
US 2004191832	A1	20040930	US 2003-624503	20030723
PRIORITY APPLN. INFO.:			IL 1998-126990 A	19981110
			WO 1999-IL605 W	19991110
			US 2001-831499 A3	20010807

OTHER SOURCE(S): MARPAT 132:345164
GI

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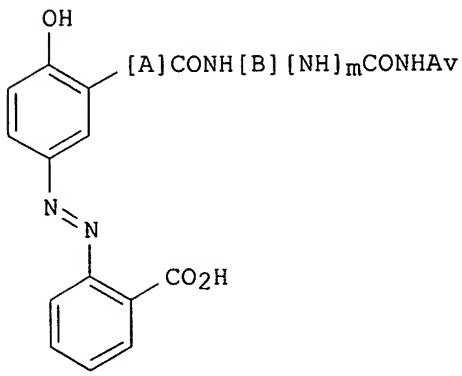


I

AB Disclosed is a covalent conjugate of a 4'-hydroxyazobenzene-2-carboxylic acid derivative (**HABA**) and an **avidin**-type mol., I (A is (CH2)n or -CH=CH-, wherein n is an integer from 0-10; B is (CH2)n wherein n is an integer from 2-10; m is zero or 1; and Av is the residue of an **avidin**-type mol. selected from the group comprising native egg-white **avidin**, recombinant **avidin**, deglycosylated **avidins**, bacterial **streptavidin**, recombinant **streptavidin**, truncated **streptavidin** and other derivs. of said **avidin**-type mols.). These HABAylated **avidins** are red colored in the quinone configuration and can be used in many applications in the **avidin-biotin** technol. Single-layer and multilayer protein systems were prepared from **biotin**-saturated HABAylated **avidin** and biotinylated anti-**HABA antibodies**.

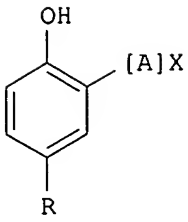
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 27 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:335382 HCAPLUS
DOCUMENT NUMBER: 132:345163
TITLE: Azobenzene derivatives as labeling agents and intermediates thereof
INVENTOR(S): **Wilchek, Meir; Bayer, Edward A.; Hofstetter, Heike; Morpurgo, Margherita**
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel
SOURCE: PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000027813	A1	20000518	WO 1999-IL604	19991110
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6602987	B1	20030805	US 2001-831494	20010807
US 2004067229	A1	20040408	US 2003-441205	20030520

PRIORITY APPLN. INFO.:
IL 1998-126991 A 19981110
WO 1999-IL604 W 19991110
US 2001-831494 A3 20010807

OTHER SOURCE(S): MARPAT 132:345163
GI



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AB Compound I (wherein R is H or -N=N-2-carboxyphenyl; A is (CH2)n or -CH=CH-, wherein n is an integer from 0 to 10, or A may also be -CH(COOH)- when R is -N=N-2-carboxyphenyl; and X is a radical selected from the group consisting of: (i) Cl; (ii) COOR1, wherein R1 is p-nitrophenyl or N-succinimidyl; (iii) CONH-NHR2, wherein R2 is H, COO(t-butyl) or COObenzyl; (iv) CONH-[B]-NHR3, wherein R3 is H, COOR1, or CO-[B']-maleimido, wherein R1 is t-Bu, p-nitrophenyl or N-succinimidyl, and B and B', the same or different, are (CH2)n wherein n is an integer from 2 to 10; (v) CONH-[B]- COOR4, wherein R4 is H, C1-C8 alkyl, N-succinimidyl; (vi) CONH-[B]-OH; (vii) CONH-[B]-CONH-NHR2, wherein R2 is H, COO(t-butyl) or COObenzyl; and (viii) NHR2, wherein R2 is H, COO(t-butyl) or COObenzyl, when A is -CH(COOH)- and R is -N=N-2-carboxyphenyl) are disclosed. The 4'-hydroxyazobenzene-2-carboxylic acid (**HABA**) compds. are novel reagents for labeling, isolating (e.g. by affinity chromatog.) and detecting (e.g. by immunoassay) biol. mols. **HABA** compds. were prepared and used to label various proteins such as BSA, keyhole limpet hemocyanin (KLH), and **antibodies**. HABAylated KLH was used as immunogen to prepare anti-**HABA antibodies** and monoclonal **antibodies**.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 28 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:214232 HCAPLUS
DOCUMENT NUMBER: 131:41599
TITLE: **Avidin-biotin** immobilization systems
AUTHOR(S): **Wilchek, Meir; Bayer, Edward A.**
CORPORATE SOURCE: Department of Biological Chemistry, The Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Immobilized Biomolecules in Analysis (1998), 15-34. Editor(s): Cass, Tony; Ligler, Frances S. Oxford University Press: Oxford, UK. CODEN: 67NBAN
DOCUMENT TYPE: Conference; General Review
LANGUAGE: English

AB A review with 25 refs. and protocols. As has been shown by numerous examples virtually any biol. active compound including **antibodies**, receptors, enzymes, inhibitors, hormones, nucleic acids, drugs, and toxins can be easily biotinylated and then bound to the **avidin** surface. After binding the biotinylated material the surface can be used for a variety of isolation purposes. Of course a target mol. can be isolated through interaction with the immobilized biotinylated mol. (the binder) or alternatively the immobilized **avidin** can be used as a simple capture system: to capture the biotinylated binder in complex with its partner (the target) for isolation e.g. a biotinylated PCR product, biotinylated **antibody**, and CD34+ cells. In addition **avidin** columns are increasingly being used for the simple retrieval or removal of

biotinylated materials from an exptl. system. In this context extraneously applied biotinylated enzymes **antibodies** etc. can be removed once their desired effect has been accomplished.
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L58 ANSWER 29 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:502910 HCAPLUS
DOCUMENT NUMBER: 127:140575
TITLE: Modified **avidin**-type molecules as targeting agents for the liver and cells of the reticuloendothelial system
INVENTOR(S): Schechter, Bilha; Arnon, Ruth; **Wilchek, Meir**
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel; Mcinnis, Patricia, A.; Schechter, Bilha; Arnon, Ruth; Wilchek, Meir
SOURCE: PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9722879	A1	19970626	WO 1996-US20333	19961220
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9716863	A1	19970714	AU 1997-16863	19961220
US 2002009416	A1	20020124	US 1998-100015	19980619
US 6638508	B2	20031028		
PRIORITY APPLN. INFO.:			IL 1995-116500 A	19951221
			WO 1996-US20333 W	19961220

AB The present invention relates to **avidin**-type mols. having 2,4,6-trinitrophenyl or lactosyl groups or being complexed with an **antibody** specific to the **avidin**-type mol., which shifts the biodistribution pattern in tissues and organs to the liver, where these mols. accumulate at high levels over several days. These modified **avidin**-type mols. provide a means for delivery of diagnostic and therapeutic agents, including radionuclides to the liver and cells of the reticuloendothelial system (RES) for diagnosing and treating hepatic disorders and disorders of the RES.

L58 ANSWER 30 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:410619 HCAPLUS
DOCUMENT NUMBER: 125:81254
TITLE: Modified cellulose-binding domain (CBD) proteins and their uses in affinity chromatography, immunoassays, enzyme reactors, and drug delivery
INVENTOR(S): **Bayer, Edward A.**; Morag, Ely; **Wilchek, Meir**; Lamed, Raphael; Shoham, Yuval
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel; Ramot University Authority for Applied Research and

Industrial Development Ltd.; Technion Research and Development Foundation Ltd.
SOURCE: PCT Int. Appl., 53 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9613524	A1	19960509	WO 1995-US13813	19951026
W: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9540114	A1	19960523	AU 1995-40114	19951026
PRIORITY APPLN. INFO.:			IL 1994-111415 A	19941027
			WO 1995-US13813 W	19951026

AB Modified cellulose-binding domains (CBD), and more particularly biotinylated CBDs, are provided that show a binding affinity to cellulose similar to unmodified CBDs. Biotinylation of the CBD allows for efficient binding of **biotin**-binding mols., e.g. **avidin** or **streptavidin**, to cellulose and the resultant matrix is appropriate for use as a universal affinity system. In addition, complexes of **avidin** or **streptavidin** and the biotinylated CBDs, through interaction with addnl. biotinylated component(s), may be used in affinity chromatog. columns, diagnostic kits, enzyme reactors, drug and chemical delivery systems, and many other applications known for the **avidin-biotin** system in various fields of biol., biochem., and medicine. Thus, the soluble form of CBD of the scaffoldin subunit S1 from the cellulosome of Clostridium thermocellum was cloned with a T7 RNA polymerase plasmid in Escherichia coli host cells. The soluble CBD is purified by affinity digestion, and biotinylated at the Cys62 or Lys residues by maleimidopropionyl-biocytin or **biotin** N-hydroxysuccinimide ester, resp. IgG could be purified from serum using the S-biotinylated CBD on a cellulosic matrix.

L58 ANSWER 31 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:599498 HCAPLUS
DOCUMENT NUMBER: 121:199498
TITLE: **Avidin** Can be Forced to Adopt Catalytic Activity
AUTHOR(S): Vetter, Stefan; **Bayer, Edward A.**; **Wilchek, Meir**
CORPORATE SOURCE: Department of Biophysics, Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Journal of the American Chemical Society (1994), 116(20), 9369-70
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
AB High resolution 3D structure anal. of the **biotin**-binding glycoprotein **avidin** and the azo dye **HABA** (4'-hydroxyazobenzene-2-carboxylic acid) in the binding site has indicated that the dye is bound as the hydrazoquinone tautomer. **HABA**

derivs., in which the phenol group is esterified using different classes of acids, are still recognized by **avidin**. The structural preference of the binding site of **avidin** for the hydrazoquinone tautomer of **HABA** is so persistent that the esters are cleaved by **avidin** in an enzyme-like reaction. Esters of carboxylic and carbonic acids are hydrolyzed by **avidin** up to 200-fold reaction velocity (acetylated **HABA**). More stable esters (e.g., sulfonates and carbamates) were insensitive to enhanced hydrolysis by **avidin**.

L58 ANSWER 32 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:648062 HCAPLUS
DOCUMENT NUMBER: 117:248062
TITLE: **Avidin-biotin** technology. Preparation of biotinylated probes
AUTHOR(S): **Bayer, Edward A.; Wilchek, Meir**
CORPORATE SOURCE: Dep. Biophys., Weizmann Inst. Sci., Rehovot, Israel
SOURCE: Methods in Molecular Biology (Totowa, NJ, United States) (1992), 10(Immunochem. Protoc.), 137-42
CODEN: MMBIED; ISSN: 1064-3745
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Some methodols., that have been developed, for attaching **biotin** to **antibodies**, antigens, and other probes are described.

L58 ANSWER 33 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:164819 HCAPLUS
DOCUMENT NUMBER: 104:164819
TITLE: Enzyme hydrazides
INVENTOR(S): **Wilchek, Meir; Bayer, Edward A.**; Gershoni, Jonathan M.
PATENT ASSIGNEE(S): Israel
SOURCE: PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 8505638	A1	19851219	WO 1985-US992	19850529
W: JP, US				
RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
IL 71947	A1	19871030	IL 1984-71947	19840529
EP 186692	A1	19860709	EP 1985-903101	19850529
R: DE, FR, GB, IT, SE				

PRIORITY APPLN. INFO.: IL 1984-71947 A 19840529
AB A novel type of staining or labeling process which is based on the chemical interaction of enzyme hydrazides with a variety of target macromols. is described. The process combines the chemical specificity and stability of the hydrazide moiety with the sensitivity and amplificatory properties of enzymes used in staining procedures and assays. The process can be used to stain aldehyde-containing, amino-containing, or carboxyl-containing macromols. and is suitable for plotting techniques, gels, solid-phase assay systems, and for light and electron microscopic cytochem. The hydrazide derivs. are particularly suited for the detection and determination of glycoconjugates by gel

electrophoretic anal. The enzyme hydrazides are prepared by linking the functional hydrazide to an enzyme by (a) direct chemical means; (b) bridging via an inert spacer; or (c) bridging via intermediate functional mols, e.g. an **antibody** or **avidin-biotin** complex.

L58 ANSWER 34 OF 51 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1980:142563 HCAPLUS
DOCUMENT NUMBER: 92:142563
TITLE: **Antibody** and **avidin** columns for the isolation of biologically active compounds
AUTHOR(S): **Wilchek, Meir**
CORPORATE SOURCE: Dep. Biophys., Weizmann Inst. Sci., Rehovoth, Israel
SOURCE: Colloque INSERM (1979), 86(Chromatogr. Affinite Interact. Mol.), 187-96
CODEN: CINMDE; ISSN: 0768-3154
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Anti-dinitrophenyl (DNP) **antibody** columns were used for the isolation of proteins, peptides and cells. For the isolation of proteins and cells which interact with other mols., the procedure included: (1) dinitrophenylation of 1 of the partners of the complex; (2) formation of the complex between the DNP-compound and its associate; (3) adsorption to the anti-DNP column and elution from the column. The adsorption can be done by 2 different methods. (a) The DNP-compound is 1st bound to the **antibody** column followed by the interacting partner, or (b) the complex formed is bound to the column, as (2). The elution can also be done in 2 different ways: (a) under conditions which dissociate antigen-**antibody** complexes, or (b) conditions which dissociate the system under study. This principle was used to purify trypsin using DNP-trypsin inhibitor and insulin cell receptor using DNP-insulin. The cells were isolated with DNP-lectins. The anti DNP-column was also used to recover DNP modified enzymes from solns. after reaction. In the case of DNP-modified enzymes, they can be used either in solution or immobilized on the DNP column. The usefulness of this approach was demonstrated with DNP-nuclease and DNP-lysozyme. Anti-DNP-**antibody** columns were also used for the specific isolation of peptides containing arginine, cysteine, histidine, methionine, tyrosine, tryptophan, and glutamic acid to which a DNP-group has been covalently attached. **Avidin** columns were also used for the isolation of **biotin**-tagged protein, peptides and cells, with 1 disadvantage, very drastic conditions were required for elution. **Antibodies** to fluorescent groups and the use of radioactive ligands will make this procedure one of the most sensitive methods for the isolation of biol. active compds.

L58 ANSWER 35 OF 51 MEDLINE on STN
ACCESSION NUMBER: 95374012 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7646033
TITLE: Expression, purification, and characterization of the cellulose-binding domain of the scaffoldin subunit from the cellulosome of Clostridium thermocellum.
AUTHOR: Morag E; Lapidot A; Govorko D; Lamed R; **Wilchek M**; **Bayer E A**; Shoham Y
CORPORATE SOURCE: Department of Biophysics, Weizmann Institute of Science, Rehovot, Israel.
SOURCE: Applied and environmental microbiology, (1995 May) Vol. 61, No. 5, pp. 1980-6.
Journal code: 7605801. ISSN: 0099-2240.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199509
ENTRY DATE: Entered STN: 30 Sep 1995
Last Updated on STN: 30 Sep 1995
Entered Medline: 19 Sep 1995

AB The major cellulose-binding domain (CBD) from the cellulosome of Clostridium thermocellum YS was cloned and overexpressed in Escherichia coli. The expressed protein was purified efficiently by a modification of a novel procedure termed affinity digestion. The properties of the purified polypeptide were compared with those of a related CBD derived from a cellulosome-like complex of a similar (but mesophilic) clostridial species, Clostridium cellulovorans. The binding properties of the two proteins with their common substrate were found to be very similar. Despite the similarity in the amino acid sequences of the two CBDs, polyclonal **antibodies** raised against the CBD from C. thermocellum failed to interact with the protein from C. cellulovorans. Chemical modification of the single cysteine of the CBD had little effect on the binding to cellulose. Biotinylation of this cysteine allowed the efficient binding of **avidin** to cellulose, and the resultant matrix is appropriate for use as a universal affinity system.

L58 ANSWER 36 OF 51 MEDLINE on STN
ACCESSION NUMBER: 90355878 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2388575
TITLE: One-step immunoaffinity purification of transferrin.
AUTHOR: **Bayer E A; Wilchek M**
SOURCE: Methods in enzymology, (1990) Vol. 184, pp. 301-3.
Journal code: 0212271. ISSN: 0076-6879.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199009
ENTRY DATE: Entered STN: 26 Oct 1990
Last Updated on STN: 26 Oct 1990
Entered Medline: 26 Sep 1990

L58 ANSWER 37 OF 51 MEDLINE on STN
ACCESSION NUMBER: 90355903 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2201883
TITLE: **Biotin**-binding proteins: overview and prospects.
AUTHOR: **Bayer E A; Wilchek M**
SOURCE: Methods in enzymology, (1990) Vol. 184, pp. 49-51. Ref: 10
Journal code: 0212271. ISSN: 0076-6879.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199009
ENTRY DATE: Entered STN: 26 Oct 1990
Last Updated on STN: 6 Feb 1998
Entered Medline: 26 Sep 1990

L58 ANSWER 38 OF 51 MEDLINE on STN
ACCESSION NUMBER: 90355861 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2201873
TITLE: Applications of **avidin-biotin**

technology: literature survey.
AUTHOR: **Wilchek M; Bayer E A**
SOURCE: Methods in enzymology, (1990) Vol. 184, pp. 14-45. Ref: 387
Journal code: 0212271. ISSN: 0076-6879.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199009
ENTRY DATE: Entered STN: 26 Oct 1990
Last Updated on STN: 26 Oct 1990
Entered Medline: 26 Sep 1990

L58 ANSWER 39 OF 51 MEDLINE on STN
ACCESSION NUMBER: 81240788 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6972969
TITLE: Membrane sialoglycolipids emerging as possible signal transducers for lymphocyte stimulation.
AUTHOR: Spiegel S; **Wilchek M**
SOURCE: Journal of immunology (Baltimore, Md. : 1950), (1981 Aug) Vol. 127, No. 2, pp. 572-5.
Journal code: 2985117R. ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198109
ENTRY DATE: Entered STN: 16 Mar 1990
Last Updated on STN: 16 Mar 1990
Entered Medline: 15 Sep 1981
AB **Biotin** hydrazide was attached covalently to the aldehyde groups produced by periodate oxidation of bovine brain gangliosides. These modified gangliosides were incorporated into mature rat thymocytes by incubation of the biotinyl gangliosides in the culture medium containing these cells. **Avidin**, which binds strongly to **biotin**, agglutinated and stimulated DNA synthesis in thymocytes containing the incorporated **biotin**-tagged gangliosides. **Avidin** has no mitogenic effect on normal thymocytes or on cells that incorporate unmodified gangliosides. With fluoresceinated **avidin**, the incorporated biotinyl gangliosides are shown to be laterally redistributed into patches and caps. These results imply that gangliosides may be involved in transmembrane communication during lymphocyte stimulation.

L58 ANSWER 40 OF 51 MEDLINE on STN
ACCESSION NUMBER: 80231787 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7392958
TITLE: The use of the **avidin-biotin** complex as a tool in molecular biology.
AUTHOR: **Bayer E A; Wilchek M**
SOURCE: Methods of biochemical analysis, (1980) Vol. 26, pp. 1-45.
Journal code: 0376644. ISSN: 0076-6941.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198009
ENTRY DATE: Entered STN: 15 Mar 1990

Last Updated on STN: 15 Mar 1990
Entered Medline: 23 Sep 1980

L58 ANSWER 41 OF 51 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN DUPLICATE 2
ACCESSION NUMBER: 2004462635 EMBASE
TITLE: My life with affinity.
AUTHOR: **Wilchek M.**
CORPORATE SOURCE: M. Wilchek, Department of Biological Chemistry, Weizmann Institute of Science, Rehovot, Israel
SOURCE: Protein Science, (2004) Vol. 13, No. 11, pp. 3066-3070. .
Refs: 20
ISSN: 0961-8368 CODEN: PRCIEI
COUNTRY: United States
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 029 Clinical Biochemistry
037 Drug Literature Index
LANGUAGE: English
ENTRY DATE: Entered STN: 19 Nov 2004
Last Updated on STN: 19 Nov 2004
DATA NOT AVAILABLE FOR THIS ACCESSION NUMBER

L58 ANSWER 42 OF 51 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN DUPLICATE 21
ACCESSION NUMBER: 79205500 EMBASE
DOCUMENT NUMBER: 1979205500
TITLE: The ultrastructural delineation of cell growth and division processes using the **avidin-biotin** complex.
AUTHOR: Skutelsky E.; **Bayer E.A.**
CORPORATE SOURCE: Sect. Biol. Ultrastruct., Weizmann Inst. Sci., Rehovot, Israel
SOURCE: Experimental Cell Research, (1979) Vol. 121, No. 2, pp. 331-336. .
CODEN: ECREAL
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 037 Drug Literature Index
005 General Pathology and Pathological Anatomy
030 Pharmacology
LANGUAGE: English
AB A novel method for the study of the fate of cell envelope components during growth and division is described. Successive treatment of the budding yeast, Saccharomyces cerevisiae, with sodium periodate and **biotin** hydrazide results in the covalent attachment of **biotin** to an unidentified cell surface component(s), without concomitant interference with subsequent growth and/or division. Further treatment of the cells with ferritin-**avidin** conjugates (FAv) enables the localization of the position of biotinylated surface components. Electron microscopical analysis of the distribution of attached FAv on cells fixed immediately after biotinylation revealed an even distribution of the **biotin** sites over the entire surface (including buds and scars) of all cells in the population. Labeling of biotinylated cells following a defined growth period revealed a new cell subpopulation completely devoid of label. The absence of **biotin** sites on the majority of buds and newly formed scars which appeared on the biotinylated yeasts indicate that the labeled cells wall constituents are stationary and not transferred to the newly synthesized cell wall of the daughter cells. The selective interaction of the biotinylated parent

cells with **avidin** or antibiotin **antibodies** may enable an affinity-based separation of successive generations from a mixed yeast cell population.

L58 ANSWER 43 OF 51 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 92280079 EMBASE
DOCUMENT NUMBER: 1992280079
TITLE: Cell-adhesive properties of **streptavidin** are mediated by the exposure of an RGD-like RYD site.
AUTHOR: Alon R.; **Bayer E.A.**; **Wilchek M.**
CORPORATE SOURCE: Department of Biophysics, The Weizmann Institute of Science,Rehovot 76100, Israel
SOURCE: European Journal of Cell Biology, (1992) Vol. 58, No. 2, pp. 270-279. .
ISSN: 0171-9335 CODEN: EJCBDN
COUNTRY: Germany
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 11 Oct 1992
Last Updated on STN: 11 Oct 1992

AB The interaction of **streptavidin** with various cell systems was studied using fluorescent derivatives of the protein. The native unprocessed form of **streptavidin** bound to cells at low levels and in a nonspecific manner. In contrast, both the truncated 'core' **streptavidin** (the commercially available form) and the **biotin**-blocked unprocessed protein bound to cells in enhanced levels and in a specific, saturable manner. This suggests that the binding of **biotin** or cleavage of the terminal portion(s) of the native protein molecule causes conformational changes which lead to the exposure of sites which presumably interact with cell surface receptors. Peptide inhibition studies demonstrated that the majority of binding to cells appears to be dependent on RGD-like specificity, suggesting that the GRYDS sequence of the **streptavidin** molecule may exhibit such specificity. Indirect immunofluorescence assays revealed that the protein is associated mainly with the cell surface. Moreover, **streptavidin** was demonstrated to compete with specific monoclonal **antibodies** to the RGD-binding site on the GpIIbIIIa integrin of activated platelets, thus suggesting that **streptavidin** may facilitate binding to ubiquitous cell-surface adhesion receptors via RGD mimicry.

L58 ANSWER 44 OF 51 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 80130687 EMBASE
DOCUMENT NUMBER: 1980130687
TITLE: The ultrastructural localization of cell surface glycoconjugates: affinity cytochemistry via the **avidin-biotin** complex.
AUTHOR: Skutelsky E.; **Bayer E.A.**
CORPORATE SOURCE: Sect. Biol. Ultrastructure, Weizmann Inst. Sci., Rehovot, Israel
SOURCE: Biologie Cellulaire, (1979) Vol. 36, No. 3, pp. 237-252. .
CODEN: BICEDQ
COUNTRY: France
DOCUMENT TYPE: Journal
FILE SEGMENT: 001 Anatomy, Anthropology, Embryology and Histology

013 Dermatology and Venereology
LANGUAGE: English
ENTRY DATE: Entered STN: 9 Dec 1991
Last Updated on STN: 9 Dec 1991

AB The use of the high affinity **avidin-biotin** complex as an intermediary for the specific ultrastructural labeling of cell surface glycoconjugates is reviewed. The **biotin** molecule can be selectively implanted onto membrane-based saccharides by various chemical and enzymatic means or via prior attachment to an appropriate biologically-active binding protein (e.g., lectin, **antibody**, hormone, etc.). The distribution of the **biotin**-modified constituents can then be qualitatively and quantitatively evaluated under the electron microscope by **avidin**, conjugated to an appropriate marker (e.g., ferritin). The method has been demonstrated to circumvent some of the problems relating to ferritin-protein conjugation. In addition, the use of the **avidin-biotin** complex offers a unified and facilitated approach for the ultrastructural labelling of cell surfaces. Since the **biotin** molecule is foreign to the experimental system, the method is especially appropriate for double-labeling and kinetics studies. The procedure is applicable for analysis of labeled material in thin sections, freeze-etched replicas, shadow-casing or negatively stained samples by transmission electron microscopy. The method can also be modified for scanning electron microscopy. Due to the flexibility of this approach, we anticipate a rapid rise in the future use of the **avidin-biotin** complex as an ultrastructural probe of cell surfaces.

L58 ANSWER 45 OF 51 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2005:371240 BIOSIS
DOCUMENT NUMBER: PREV200510169309
TITLE: The application of biorecognition: Past, present and future trends.
AUTHOR(S): **Wilchek, M.** [Reprint Author]
CORPORATE SOURCE: Weizmann Inst, Rehovoth, Israel
SOURCE: Protein Science, (AUG 2004) Vol. 13, No. Suppl. 1, pp. 66. Meeting Info.: 18th Symposium of the Protein-Society. San Diego, CA, USA. August 14 -18, 2004. Protein Soc; Abbott Lab Fund; Amer Peptide Soc; Amgen; Biogen Idec; DARPA; Eli Lilly & Co; Eli Lilly Res Labs, Biotechnol Discovery Res; Genencor Int; Genentech Inc; Merck Res Labs; Natl Sci Fdn; NIH; New England BioLabs; Novartis Inst Biomed Res; Pfizer Inc; Protein Soc Educ Comm; Protein Soc Young Protein Sci Comm; Roche Pharmaceut; Sunesis Pharmaceut Inc. ISSN: 0961-8368.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 21 Sep 2005
Last Updated on STN: 21 Sep 2005

L58 ANSWER 46 OF 51 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2003:523434 BIOSIS
DOCUMENT NUMBER: PREV200300523619
TITLE: **Avidin** derivatives and uses thereof.
AUTHOR(S): **Wilchek, Meir** [Inventor, Reprint Author]; **Bayer, Edward A** [Inventor]; **Hofstetter, Heike** [Inventor]; **Morpurgo, Margherita**

[Inventor]
CORPORATE SOURCE: Rehovot, Israel
ASSIGNEE: Yeda Research and Development Co. LTD, Israel
PATENT INFORMATION: US 6632929 20031014
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Oct 14 2003) Vol. 1275, No. 2. http://www.uspto.gov/web/menu/patdata.html. e-file. ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 5 Nov 2003
Last Updated on STN: 5 Nov 2003

AB A covalent conjugate of a 4'-hydroxyazobenzene-2-carboxylic acid derivative (**HABA**) and an **avidin**-type molecule, of the formula: ##STR1## wherein A is (CH2)n or --CHdbdCH--, wherein n is an integer from 0-10; B is (CH2)n wherein n is an integer from 2 to 10; m is zero or 1; and Av is the residue of an **avidin**-type molecule selected from the group comprising native egg-white **avidin**, recombinant **avidin**, deglycosylated **avidins**, bacterial **streptavidin**, recombinant **streptavidin**, truncated **streptavidin** and other derivatives of said **avidin**-type molecules. These HABAylated **avidins** are red colored in the quinone configuration and can be used in many applications in the **avidin-biotin** technology.

L58 ANSWER 47 OF 51 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2003:408732 BIOSIS
DOCUMENT NUMBER: PREV200300408732
TITLE: Azobenzene derivatives as labeling agents and intermediates thereof.
AUTHOR(S): **Wilchek, Meir** [Inventor, Reprint Author]; **Bayer, Edward A.** [Inventor]; **Hofstetter, Heike** [Inventor]; **Morpurgo, Margherita** [Inventor]
CORPORATE SOURCE: Rehovot, Israel
ASSIGNEE: Yeda Research and Development Co., Ltd., Rehovot, Israel
PATENT INFORMATION: US 6602987 20030805
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Aug 5 2003) Vol. 1273, No. 1. http://www.uspto.gov/web/menu/patdata.html. e-file. ISSN: 0098-1133 (ISSN print).
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Sep 2003
Last Updated on STN: 3 Sep 2003

AB A compound of the formula I: ##STR1## wherein R is H or --NdbdN-2-carboxyphenyl; A is (CH2)n or --CHdbdCH--, wherein n is an integer from 0 to 10, or A may also be --CH(COOH)-- when R is --NdbdN-2-carboxyphenyl; and X is a radical selected from the group consisting of: (i) Cl; (ii) COOR1, wherein R1 is p-nitrophenyl or N-succinimidyl; (iii) CONH--NHR2, wherein R2 is H, COO(t-butyl) or COObenzyl; (iv) CONH--[B]--NHR3, wherein R3 is H, COOR1, or CO--[B']--maleimido, wherein R1 is t-butyl, p-nitrophenyl or N-succinimidyl, and B and B', the same or different, are (CH2)n wherein n is an integer from 2 to 10; (v) CONH--[B]--COOR4, wherein R4 is H, C1 -C8 alkyl, N-succinimidyl; (vi) CONH--[B]--OH; (vii) CONH--[B]--CONH--NHR2, wherein R2 is H, COO(t-butyl) or COObenzyl; and (viii) NHR2, wherein R2 is

H, COO(t-butyl) or COObenzyl, when A is --CH(COOH)-- and R is --NdbdN-2-carboxyphenyl. The 4'-hydroxyazobenzene-2-carboxylic acid (HABA) compounds are novel reagents for labeling, isolation and detection of biological molecules.

L58 ANSWER 48 OF 51 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 2000:313750 BIOSIS
DOCUMENT NUMBER: PREV200000313750
TITLE: The application of biorecognition as demonstrated by the avidin-biotin interaction.
AUTHOR(S): **Wilchek, M.**; Hofstetter, O.; **Hofstetter, H.**; **Bayer, E. A.** [Reprint author]
CORPORATE SOURCE: Department of Biological Chemistry, Weizmann Institute of Science, Rehovot, Israel
SOURCE: Biomolecular Engineering, (May, 2000) Vol. 16, No. 5, pp. 147. print.
Meeting Info.: First International Conference on (Strept) Avidin-Biotin Technologies. Alberta, Canada. June 18-21, 2000.
ISSN: 1389-0344.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 26 Jul 2000
Last Updated on STN: 7 Jan 2002

L58 ANSWER 49 OF 51 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 2000:386408 BIOSIS
DOCUMENT NUMBER: PREV200000386408
TITLE: Foreword and introduction to the book (strept) **avidin-biotin** system.
AUTHOR(S): **Wilchek, Meir** [Reprint author]; **Bayer, Edward A.** [Reprint author]
CORPORATE SOURCE: Department of Biological Chemistry, The Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Biomolecular Engineering, (31 December, 1999) Vol. 16, No. 1-4, pp. 1-4. print.
ISSN: 1389-0344.
DOCUMENT TYPE: Article
Editorial
LANGUAGE: English
ENTRY DATE: Entered STN: 13 Sep 2000
Last Updated on STN: 8 Jan 2002

L58 ANSWER 50 OF 51 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 1996:389924 BIOSIS
DOCUMENT NUMBER: PREV199699112280
TITLE: The **avidin-biotin** system.
AUTHOR(S): **Bayer, Edward A.**; **Wilchek, Meir**
CORPORATE SOURCE: Dep. Biophysics, Weizmann Inst. Sci., Rehovot 76100, Israel
SOURCE: Diamandis, E. P. [Editor]; Christopoulos, T. K. [Editor]. (1996) pp. 237-267. Immunoassay.
Publisher: Academic Press, Inc., 1250 Sixth Ave., San Diego, California 92101, USA; Academic Press Ltd., 14 Belgrave Square, 24-28 Oval Road, London NW1 70X, England, UK.

ISBN: 0-12-214730-8.
DOCUMENT TYPE: Book
Book; (Book Chapter)
LANGUAGE: English
ENTRY DATE: Entered STN: 3 Sep 1996
Last Updated on STN: 11 Oct 1996

L58 ANSWER 51 OF 51 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 1991:110298 BIOSIS
DOCUMENT NUMBER: PREV199191057688; BA91:57688
TITLE: AFFINITY CLEAVAGE AND TARGETED CATALYSIS OF PROTEINS USING THE **AVIDIN BIOTIN** SYSTEM.
AUTHOR(S): **BAYER E A** [Reprint author]; GROOTJANS J J; ALON R; **WILCHEK M**
CORPORATE SOURCE: DEP BIOPHYSICS, WEIZMANN INST SCI, REHOVOT 76100, ISRAEL
SOURCE: Biochemistry, (1990) Vol. 29, No. 5, pp. 11274-11279.
CODEN: BICHAW. ISSN: 0006-2960.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 27 Feb 1991
Last Updated on STN: 28 Feb 1991

AB The **avidin-biotin** system was used in order to target enzymes to their substrates in complex mixtures of proteins in solution. The approach described here thus mimics natural systems in which enzymes usually act in selective fashion, due, perhaps, to proximity efefcts. For affinity cleavage studies, biotinyl transferrin was used as a model target substrate. **Avidin** or **streptavidin** was then employed to bridge between the biotinylated target protein and a biotinyl protease. Bovine serum albumin was included in the reaction mixtures to assess the level of nonspecific cleavage. In the case of an unbiotinylated target protein, **avidin** could be used to inhibit the hydrolytic action of the biotinyl protease. In some systems, a biotinyl **antibody** could be used to direct the **avidin**-bridged biotinyl protease to an unbiotinylated target antigen. The data support the contention that preferential cleavage reflects two separate phenomena: (i) **avidin** confers a conformational alteration of the biotinylated target protein, and (ii) the biotinyl protease is targeted (via the **avidin** bridge) to the proximity of the biotinylated target protein, thereby promoting cleavage of the conformationally altered molecule. This is the first report in which a proteolytic enzyme could be selectively targeted to specifically hydrolyze a defined protein substrate in solutions containing a complex mixture of other proteins. The approach appears to be a general phenomenon for "targeted catalysis", appropriate for other applications, particularly for affinity cleavage and targeted catalysis of cell-based macromolecules.

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     (FILE 'HOME' ENTERED AT 13:06:56 ON 03 AUG 2006)

     FILE 'HCAPLUS' ENTERED AT 13:07:05 ON 03 AUG 2006
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                SEL RN

     FILE 'REGISTRY' ENTERED AT 13:07:32 ON 03 AUG 2006
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                OR 118-92-3/BI OR 1634-82-8/BI OR 219531-99-4/BI OR 25550-58-7/
                BI OR 268544-18-9/BI OR 268544-19-0/BI OR 268544-20-3/BI OR
                268544-23-6/BI OR 268544-24-7/BI OR 268544-30-5/BI OR 268544-33
                -8/BI OR 268564-09-6/BI OR 27072-45-3/BI OR 2780-89-4/BI OR
                51-67-2/BI OR 51857-17-1/BI OR 552-63-6/BI OR 583-17-5/BI OR
                6066-82-6/BI OR 7440-57-5/BI OR 7631-86-9/BI OR 9003-53-6/BI
                OR 9013-20-1/BI OR 98-95-3/BI OR 99-35-4/BI)

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     FILE 'REGISTRY' ENTERED AT 13:08:48 ON 03 AUG 2006
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L6          4839 SEA SSS FUL L4
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                D SCA
                SEL RN
L8             1 SEA ABB=ON  PLU=ON  1405-69-2/CRN OR L7
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                D SCA
L21            1 SEA ABB=ON  PLU=ON  "HABA (DYE)"/CN
                D SCA
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                E E3+ALL
                E E2+ALL
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     FILE 'REGISTRY' ENTERED AT 13:16:52 ON 03 AUG 2006
                E HABA/CN
L27            1 SEA ABB=ON  PLU=ON  "HABA (DYE)"/CN
                D

     FILE 'MEDLINE' ENTERED AT 13:17:29 ON 03 AUG 2006
L28           37 SEA ABB=ON  PLU=ON  L27

     FILE 'HCAPLUS, MEDLINE, EMBASE, BIOSIS' ENTERED AT 13:18:20 ON 03 AUG 2006
L29         5020 SEA ABB=ON  PLU=ON  L6
L30         5410 SEA ABB=ON  PLU=ON  L29 OR (HABA OR HYDROXYBENZENEAZO BENZOIC
                OR HYDROXYPHENYLAZO BENZOIC OR HYDROXYBENZENEAZOBENZOIC OR
                HYDROXYPHENYLAZOBENZOIC OR HYDROXYPHENYL AZO BENZOIC OR
                HYDROXYBENZENE AZO BENZOIC)
L31           81 SEA ABB=ON  PLU=ON  L30 AND (ANTIBOD? OR IMMUNOGLOB?)
L32           35 SEA ABB=ON  PLU=ON  L31 AND ?BIOTIN?
L33           35 SEA ABB=ON  PLU=ON  L32 AND ?AVIDIN?
L*** DEL      26 DUP REM L26 L33 (22 DUPLICATES REMOVED)
                     ANSWERS '1-22' FROM FILE HCAPLUS
                     ANSWERS '23-24' FROM FILE MEDLINE
                     ANSWERS '25-26' FROM FILE BIOSIS
```

```
=> dup rem l26 l33
PROCESSING COMPLETED FOR L26
PROCESSING COMPLETED FOR L33
L34          26 DUP REM L26 L33 (22 DUPLICATES REMOVED)
                ANSWERS '1-22' FROM FILE HCAPLUS
                ANSWERS '23-24' FROM FILE MEDLINE
                ANSWERS '25-26' FROM FILE BIOSIS

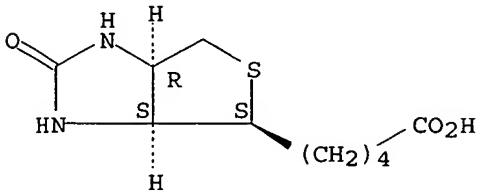
=> d l34 ibib abs hitind hitstr 1-26

L34  ANSWER 1 OF 26  HCAPLUS  COPYRIGHT 2006 ACS on STN DUPLICATE 1
ACCESSION NUMBER:         2006:681076  HCAPLUS
TITLE:                    Device for magnet assisted transfer of chemical
                          compounds into cells and method for magnet assisted
                          transfer of proteins into cells
INVENTOR(S):              Schmidt, Thomas; Germeroth, Lothar
PATENT ASSIGNEE(S):       IBA GmbH, Germany
SOURCE:                   PCT Int. Appl., 54 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.         DATE
     ---------------      ----   --------    --------------------    --------
     WO 2006072593         A2    20060713    WO 2006-EP107           20060109
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
             CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
             GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,
             KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX,
             MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,
             SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
             VN, YU, ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
             CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
             GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM
PRIORITY APPLN. INFO.:                       US 2005-642312P     P  20050107
AB   Disclosed is a method for transferring a protein into a cell comprising
     contacting a protein to be transferred with at least one magnetic particle
     to form a complex comprising the protein and the magnetic particle, and
     contacting said complex with a cell in the presence of a suitable
     permanent magnetic field, thereby transferring the protein into the cell.
     Also disclosed is such a complex as well as to methods for making it.
     Further disclosed is a device for magnet assisted transfer of proteins,
     nucleic acids and other substances, wherein the device comprises a
     plurality of permanent magnets arranged adjacent to each other in a
     substantially gap-free and continuous arrangement that creates a
     substantially homogeneous magnetic surface.  Furthermore, disclosed are
     methods, compns. and kits useful for research, diagnostics and/or therapy.
     An array of magnets having a closed polygonal shape on a steel plate
     directly side by side with alternating polarization generated a much more
     homogeneous magnetic field.  The transduction of HEK 293 cells with
     β-galactosidase was more homogeneous over the whole surface of the
     bottom of the culturing vessel.  PolyMAG magnetic beads were used to
     transduct the protein.
IC   ICM  G01N
```

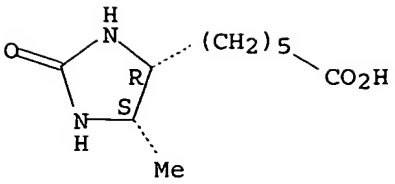
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 1
IT INDEXING IN PROGRESS
IT **Antibodies and Immunoglobulins**
Chelates
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(and affinity peptides as mediating components linking protein and magnetic particles; device and kit for magnet assisted transfer of chemical compds. and proteins into cells)
IT **58-85-5**, Biotin 60-00-4, EDTA 67-42-5, EGTA **533-48-2**
, Desthiobiotin 1200-22-2, Lipoic acid 13395-35-2, 2-Iminobiotin
22342-46-7, Diaminobiotin **107946-58-7 107946-58-7D**,
di-Me derivs.
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as agent separating protein and magnetic particles once inside cells; device and kit for magnet assisted transfer of chemical compds. and proteins into cells)
IT **9013-20-1D**, Streptavidin, muteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(fusion peptide having affinity for, for binding protein to magnetic particles; device and kit for magnet assisted transfer of chemical compds. and proteins into cells)
IT **9013-20-1**, Streptavidin
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(fusion peptide having affinity for, for binding protein to magnetic particles; device and kit for magnet assisted transfer of chemical compds. and proteins into cells)
IT **58-85-5**, Biotin **533-48-2**, Desthiobiotin
107946-58-7 107946-58-7D, di-Me derivs.
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(as agent separating protein and magnetic particles once inside cells; device and kit for magnet assisted transfer of chemical compds. and proteins into cells)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

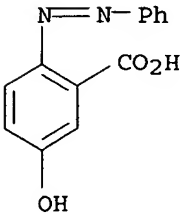


RN 533-48-2 HCAPLUS
CN 4-Imidazolidinehexanoic acid, 5-methyl-2-oxo-, (4R,5S)- (8CI, 9CI) (CA INDEX NAME)

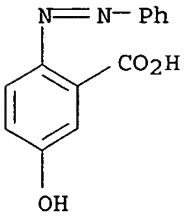
Absolute stereochemistry.



RN 107946-58-7 HCAPLUS
CN Benzoic acid, 5-hydroxy-2-(phenylazo)- (9CI) (CA INDEX NAME)



RN 107946-58-7 HCAPLUS
CN Benzoic acid, 5-hydroxy-2-(phenylazo)- (9CI) (CA INDEX NAME)



IT **9013-20-1D**, Streptavidin, muteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(fusion peptide having affinity for, for binding protein to magnetic particles; device and kit for magnet assisted transfer of chemical compds. and proteins into cells)
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

IT **9013-20-1**, Streptavidin
RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(fusion peptide having affinity for, for binding protein to magnetic particles; device and kit for magnet assisted transfer of chemical compds. and proteins into cells)
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L34 ANSWER 2 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2005:997137 HCAPLUS

DOCUMENT NUMBER: 144:208236
TITLE: Application of **avidin-biotin** technology for the characterization of a model hapten-protein conjugate
AUTHOR(S): Dotsikas, Yannis; Loukas, Yannis L.
CORPORATE SOURCE: Department of Pharmaceutical Chemistry, School of Pharmacy, University of Athens, Athens, Greece
SOURCE: Journal of Immunoassay & Immunochemistry (2005), 26(4), 285-293
CODEN: JIIOAZ; ISSN: 1532-1819
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A simple method was developed for the rapid characterization of the covalent binding of haptens to proteins such as enzymes, bovine serum albumin (BSA), and other carrier-proteins and **antibodies**. In the present study, a com. available fentanyl-BSA conjugate was characterized by a 4'-hydroxyazobenzene-2-carboxylic acid (**HABA**) dye assay that followed a **biotinylation** reaction. This protocol allowed the indirect observation of the average hapten number per BSA mol. Such measurement is useful for optimizing reaction conditions to yield a more precisely defined product for immunol. applications. The obtained result was within the limits suggested by the manufacturer of the conjugate.

CC 9-5 (Biochemical Methods)
ST **avidin biotin** hapten protein conjugate
biotinylation fluorometry immunoassay
IT **Biotinylation**
Electrospray ionization mass spectrometry
Immunoassay
Optimization
(application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)
IT Enzymes, analysis
Proteins
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)
(application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)
IT **Avidins**
RL: NUU (Other use, unclassified); USES (Uses)
(complexes, **biotin**/; application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)
IT Proteins
RL: ANT (Analyte); ANST (Analytical study)
(conjugates, hapten; application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)
IT Albumins, analysis
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)
(serum, bovine; application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)
IT **1634-82-8**, 4'-Hydroxyazobenzene-2-carboxylic acid
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)
IT 6066-82-6, N-Hydroxy-succinimide
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)

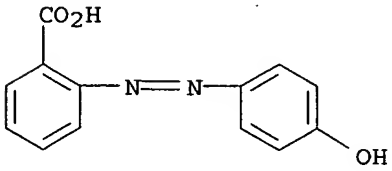
(application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)

IT 58-85-5, **Biotin**
RL: NUU (Other use, unclassified); USES (Uses)
(application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)

IT 72040-63-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)

IT **1634-82-8**, 4'-Hydroxyazobenzene-2-carboxylic acid
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(application of **avidin-biotin** technol. for characterization of a model hapten-protein conjugate)

RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 3 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2004:740472 HCAPLUS
DOCUMENT NUMBER: 141:256960
TITLE: Stabilized composition for fluorimetric, colorimetric or chemiluminescent assays
INVENTOR(S): Madejon Seiz, Antonio; Limones Lopez, Gemma; Haro Castuera, Amparo; De Grado Sanz, Myriam; Franco de Sarabia Rosado, Pedro Manuel
PATENT ASSIGNEE(S): Biotools Biotechnological & Medical Laboratories, S.A., Spain
SOURCE: PCT Int. Appl., 70 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Spanish
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

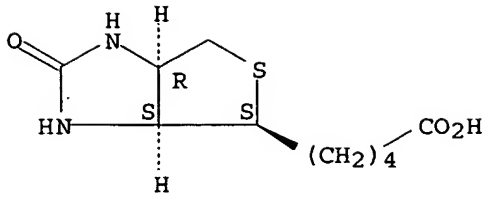
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004076656	A1	20040910	WO 2004-ES24	20040120
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
ES 2214144	A1	20040901	ES 2003-472	20030226
ES 2214144	B1	20050901		

EP 1598418 A1 20051123 EP 2004-703407 20040120
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
PRIORITY APPLN. INFO.: ES 2003-472 A 20030226
WO 2004-ES24 W 20040120

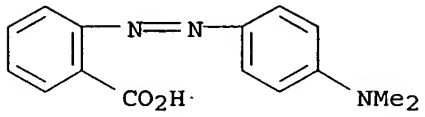
AB The invention relates to a stabilized composition containing: a component (A) which is selected from (i) a compound comprising a fluorophore, (ii) a compound comprising a first member of a specific binding pair (e.g., avidin-biotin) which can recognize and interact with a second member of said specific binding pair, (iii) an enzymic activity which catalyzes a colorimetric or chemiluminescent reaction, (iv) a conjugate comprising an enzymic activity which catalyzes a colorimetric or chemiluminescent reaction and a member of a specific binding pair which can recognize and bind to a second member of said specific binding pair, (v) one or more compds. bound to a solid support (microarrays of nucleic acids or proteins, for example), and mixts. thereof; and a component (B) comprising a stabilizing mixture The stabilizing mixture contains an agent protecting the A components from desiccation (such as nonreducing saccharides such as palatinitol), an inhibitor of condensation reactions between carbonyl or carboxyl groups and amino or phosphate groups (e.g., betaine, aminoguanidine), and an inert polymer which creates a net-like structure which inhibits movement of A components (such as PVP or PEG). The invention can be used for fluorimetric, colorimetric or chemiluminescent assays. Thus, dried mixts. containing primers, DNA polymerase, dNTPs, and FRET probe for real-time PCR were stabilized with melezitose or palatinitol with lysine and glycogen or gum arabic. Alternatively, raffinose with betaine and glycogen may be used.

IC ICM C12N009-96
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 3, 7, 15
IT **Antibodies and Immunoglobulins**
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(labeled; stabilized composition for fluorimetric, colorimetric or chemiluminescent assays)
IT **58-85-5D**, Biotin, conjugates **493-52-7D**, Methyl red, conjugates with hybridization probes 1672-46-4D, Digoxigenin, conjugates 2321-07-5D, Fluorescein, conjugates with hybridization probes 6268-49-1D, DABCYL, conjugates with hybridization probes 9001-78-9D, conjugates **9013-20-1D**, Streptavidin, conjugates 120718-52-7D, TAMRA, conjugates with hybridization probes 217087-73-5, SYBR green 245670-26-2D, LC Red 640, conjugates with hybridization probes
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(stabilized composition for fluorimetric, colorimetric or chemiluminescent assays)
IT **58-85-5D**, Biotin, conjugates **493-52-7D**, Methyl red, conjugates with hybridization probes **9013-20-1D**, Streptavidin, conjugates
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(stabilized composition for fluorimetric, colorimetric or chemiluminescent assays)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 493-52-7 HCAPLUS
CN Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]- (9CI) (CA INDEX NAME)



RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 4 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2004:305020 HCAPLUS
DOCUMENT NUMBER: 140:345638
TITLE: Protein encapsulated catalysts for enantioselective reactions
INVENTOR(S): Ward, Thomas R.
PATENT ASSIGNEE(S): Switz.
SOURCE: Ger. Offen., 33 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10246740	A1	20040415	DE 2002-10246740	20021007
PRIORITY APPLN. INFO.:			DE 2002-10246740	20021007

AB Catalyst complexes suitable for catalyzing enantioselective reactions and a process for their preparation is provided. Specifically the invention provides a metal catalyst complexed with a ligand. This ligand complex is then linked through a spacer to a biomol. such as biotin or an antigen. The biomol. serves as a binding point for a protein such as avidin, streptavidin or an **antibody** to associate itself with the catalytic complex. The protein itself encapsulates the catalytic complex in such a way that a binding pocket is provided surrounding the ligand complex. As a whole, the protein encapsulated complex functions as an artificial enzyme whose reaction selectivity and specificity can be manipulating the make up of the complex, or the reaction environment in which the complex is used.
IC ICM B01J031-16
ICS B01J031-02; A61K039-00
CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)

Section cross-reference(s): 3, 7, 16, 21

IT **Antibodies and Immunoglobulins**
Antigens
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(protein encapsulated catalysts for enantioselective reactions)

IT **680298-10-6**, Avidin (synthetic Gallus domesticus) 680298-12-8 680298-14-0
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; protein encapsulated catalysts for enantioselective reactions)

IT **58-85-5**, Biotin 281-23-2, Tricyclo[3.3.1.13,7]decane **1634-82-8D**, HABA, and analogs of 5429-56-1 9035-51-2, Cytochrome P 450, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(protein encapsulated catalysts for enantioselective reactions)

IT **680298-10-6**, Avidin (synthetic Gallus domesticus)
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; protein encapsulated catalysts for enantioselective reactions)

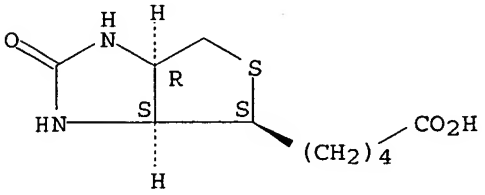
RN 680298-10-6 HCAPLUS
CN Avidin (synthetic Gallus domesticus) (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

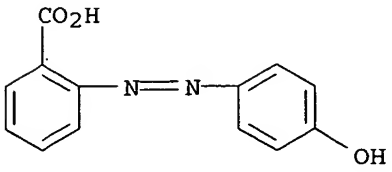
IT **58-85-5**, Biotin **1634-82-8D**, HABA, and analogs of
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(protein encapsulated catalysts for enantioselective reactions)

RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



L34 ANSWER 5 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 5
ACCESSION NUMBER: 2004:448950 HCAPLUS
DOCUMENT NUMBER: 141:155693
TITLE: Solid-phase **biotinylation** of **antibodies**
AUTHOR(S): Strachan, Elizabeth; Mallia, A. Krishna; Cox, Joanna M.; Antharavally, Babu; Desai, Surbhi; Sykaluk, Laura; O'Sullivan, Valerie; Bell, Peter A.
CORPORATE SOURCE: Pierce Biotechnology, Inc., Rockford, IL, 61101, USA
SOURCE: Journal of Molecular Recognition (2004), 17(3), 268-276
CODEN: JMORE4; ISSN: 0952-3499
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **Biotinylation** is an established method of labeling **antibody** mols. for several applications in life science research. **Antibody** functional groups such as amines, cis hydroxyls in carbohydrates or sulfhydryls may be modified with a variety of **biotinylation** reagents. Solution-based **biotinylation** is accomplished by incubating **antibody** in an appropriate buffered solution with **biotinylation** reagent. Unreacted **biotinylation** reagent must be removed via dialysis, diafiltration or desalting. Disadvantages of the solution-based approach include dilution and loss of **antibody** during post-reaction purification steps, and difficulty in **biotinylation** and recovery of small amts. of **antibody**. Solid-phase **antibody biotinylation** exploits the affinity of mammalian IgG-class **antibodies** for nickel IMAC (immobilized metal affinity chromatog.) supports. In this method, **antibody** is immobilized on a nickel-chelated chromatog. support and derivatized on-column. Excess reagents are easily washed away following reaction, and **biotinylated** IgG mol. is recovered under mild elution conditions. Successful solid phase labeling of **antibodies** through both amine and sulfhydryl groups is reported, in both column and mini-spin column formats. Human or goat IgG was bound to a Ni-IDA support. For sulfhydryl labeling, native disulfide bonds were reduced with TCEP, and reduced IgG was **biotinylated** with maleimide-PEO2 **biotin**. For amine labeling, immobilized human IgG was incubated with a solution of NHS-PEO4 **biotin**. **Biotinylated** IgG was eluted from the columns using a buffered 0.2M imidazole solution and characterized by ELISA, **HABA/avidin** assay, probing with a **streptavidin**-alkaline phosphatase conjugate, and binding to a monomeric **avidin** column. The solid phase protocol for sulfhydryl labeling is significantly shorter than the corresponding solution phase method. **Biotinylation** in solid phase is convenient, efficient and easily applicable to small amts. of **antibody** (e.g. 100 μg). **Antibody biotinylated** on-column was found to be equivalent in stability and antigen-recognition ability to **antibody biotinylated** in solution Solid-phase methods utilizing Ni-IDA resin have potential for labeling nucleic acids, histidine-rich proteins and recombinant proteins containing polyhistidine purification tags, and may also be applicable for other affinity systems and labels.

CC 15-3 (Immunochemistry)
ST solid phase **biotinylation antibody**
IT **Antibodies** and **Immunoglobulins**
RL: RCT (Reactant); RACT (Reactant or reagent)

(IgG; solid-phase **biotinylation** of **antibodies**)

IT **Biotinylation**
Human
(solid-phase **biotinylation** of **antibodies**)

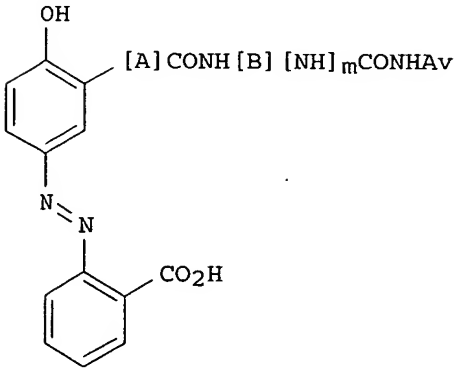
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 6 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 2000:335383 HCAPLUS
DOCUMENT NUMBER: 132:345164
TITLE: Avidin derivatives conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof
INVENTOR(S): Wilchek, Meir; Bayer, Edward A.; Morpurgo, Margherita; Hofstetter, Heike
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel
SOURCE: PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000027814	A1	20000518	WO 1999-IL605	19991110
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6632929	B1	20031014	US 2001-831499	20010807
US 2004191832	A1	20040930	US 2003-624503	20030723

PRIORITY APPLN. INFO.:
IL 1998-126990 A 19981110
WO 1999-IL605 W 19991110
US 2001-831499 A3 20010807

OTHER SOURCE(S): MARPAT 132:345164
GI



I

AB Disclosed is a covalent conjugate of a 4'-hydroxyazobenzene-2-carboxylic acid derivative (HABA) and an avidin-type mol., I (A is (CH2)n or -CH=CH-, wherein n is an integer from 0-10; B is (CH2)n wherein n is an integer from 2-10; m is zero or 1; and Av is the residue of an avidin-type mol. selected from the group comprising native egg-white avidin, recombinant avidin, deglycosylated avidins, bacterial streptavidin, recombinant streptavidin, truncated streptavidin and other derivs. of said avidin-type mols.). These HABAylated avidins are red colored in the quinone configuration and can be used in many applications in the avidin-biotin technol. Single-layer and multilayer protein systems were prepared from biotin-saturated HABAylated avidin and biotinylated anti-HABA **antibodies**.

IC ICM C07D207-40
ICS C07C245-08; C07C235-34; A61K031-192; A61K031-195; A61P043-00; C07K014-36; C07D273-02

CC 9-15 (Biochemical Methods)
Section cross-reference(s): 15, 27

IT **Antibodies**
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(biotinylated, to HABA; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **Antibodies**
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); DEV (Device component use); PUR (Purification or recovery); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(to HABA; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT 25550-58-7, Dinitrophenol
RL: BPR (Biological process); BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(**antibody** to and HABAylated avidins labeling with; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **1634-82-8DP**, 4'-Hydroxyazobenzene-2-carboxylic acid, derivs., conjugates with avidins **9013-20-1DP**, Streptavidin, conjugates with azobenzene derivs.
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **219532-01-1DP**, conjugates with avidins
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **219532-01-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **219532-00-0DP**, conjugates with avidins **268544-34-9DP**,

conjugates with avidins
RL: SPN (Synthetic preparation); PREP (Preparation)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **219532-00-0P 268544-34-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(avidins HABAylation with; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **58-85-5D**, Biotin, conjugates with ligand
RL: RCT (Reactant); RACT (Reactant or reagent)
(immobilization of, on HABAylated avidin column; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **219531-99-4P** 268544-18-9P 268544-19-0P 268544-23-6P
268544-24-7P **268544-30-5P 268544-33-8P**
268564-09-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of avidin conjugate; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT 51-67-2, Tyramine 61970-08-9, Sepharose CL-4B 268544-20-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(in preparation of gel for affinity purification of anti-HABA **antibodies**; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

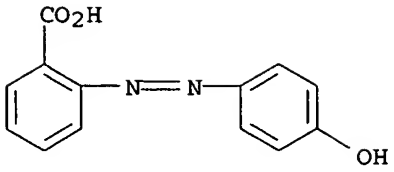
IT 61970-08-9DP, Sepharose CL-4B, activated
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of gel for affinity purification of anti-HABA **antibodies**; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT 9012-36-6DP, Sepharose, HABA functionalized
RL: BPR (Biological process); BSU (Biological study, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(preparation of, for affinity purification of anti-HABA **antibodies**; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

IT **58-85-5**, Biotin
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(technol. using avidin and; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

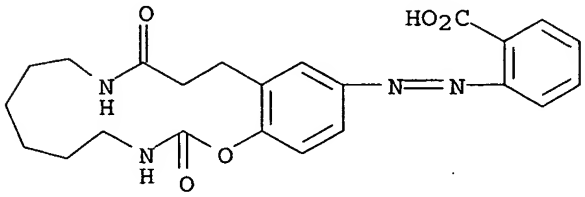
IT **1634-82-8DP**, 4'-Hydroxyazobenzene-2-carboxylic acid, derivs., conjugates with avidins **9013-20-1DP**, Streptavidin, conjugates with azobenzene derivs.
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)

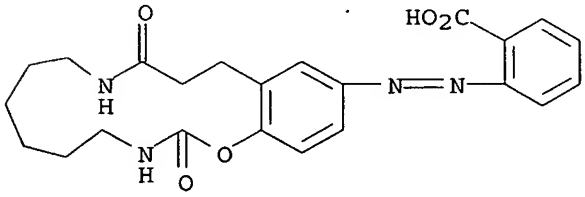


RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **219532-01-1DP**, conjugates with avidins
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 219532-01-1 HCAPLUS
CN Benzoic acid, 2-[(2,3,4,5,6,7,8,9,10,11,12,13-dodecahydro-2,11-dioxo-1,3,10-benzoxadiazacyclopentadecin-15-yl)azo]- (9CI) (CA INDEX NAME)

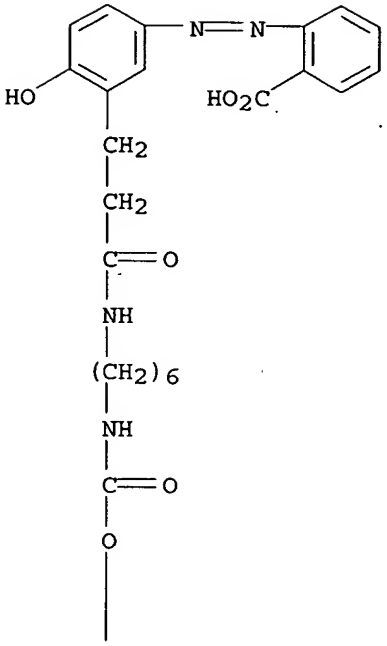


IT **219532-01-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 219532-01-1 HCAPLUS
CN Benzoic acid, 2-[(2,3,4,5,6,7,8,9,10,11,12,13-dodecahydro-2,11-dioxo-1,3,10-benzoxadiazacyclopentadecin-15-yl)azo]- (9CI) (CA INDEX NAME)

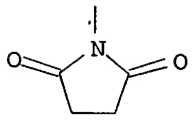


IT **219532-00-0DP**, conjugates with avidins **268544-34-9DP**, conjugates with avidins
RL: SPN (Synthetic preparation); PREP (Preparation)
(avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 219532-00-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

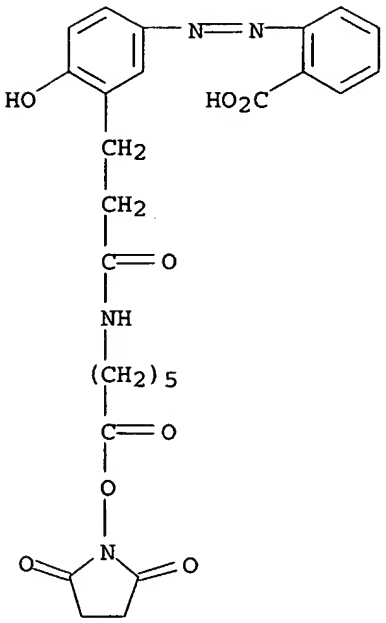
PAGE 1-A



PAGE 2-A



RN 268544-34-9 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

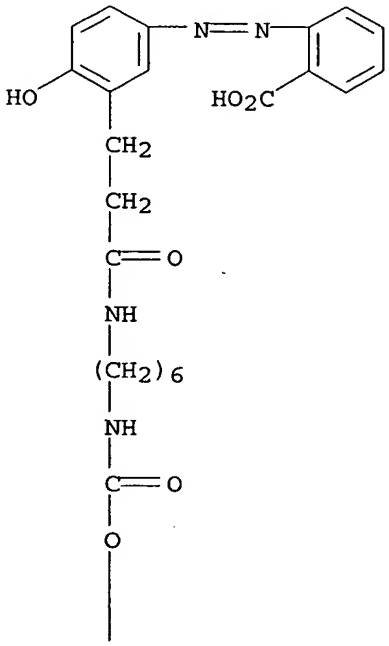


IT **219532-00-0P 268544-34-9P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(avidins HABAylation with; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

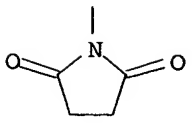
RN 219532-00-0 HCAPLUS

CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

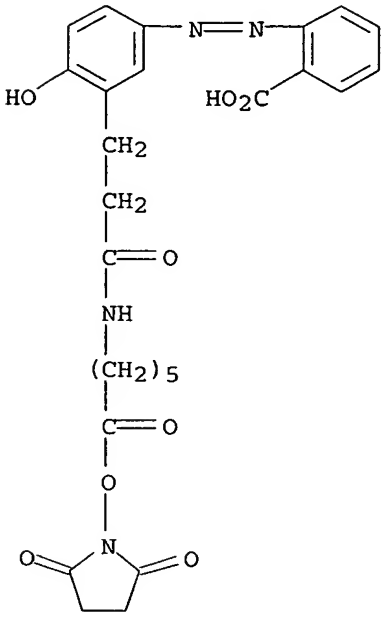
PAGE 1-A



PAGE 2-A

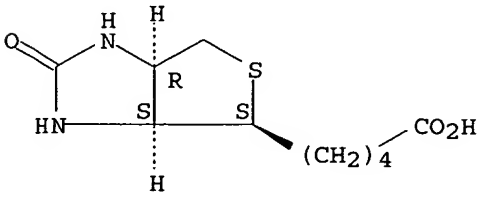


RN 268544-34-9 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



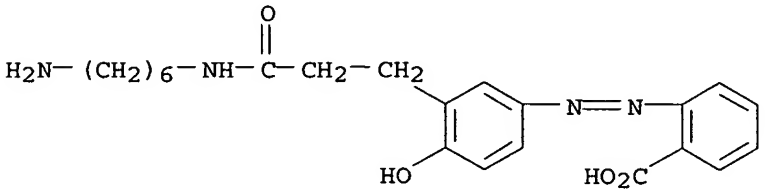
IT **58-85-5D**, Biotin, conjugates with ligand
RL: RCT (Reactant); RACT (Reactant or reagent)
(immobilization of, on HABAylated avidin column; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

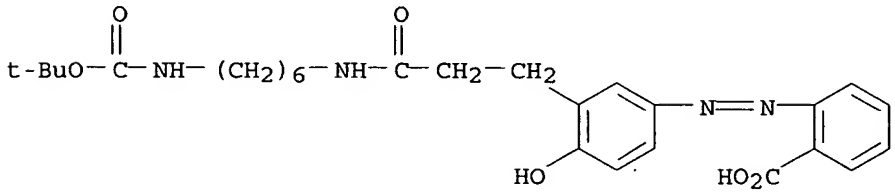


IT **219531-99-4P 268544-30-5P 268544-33-8P**
268564-09-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in preparation of avidin conjugate; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)

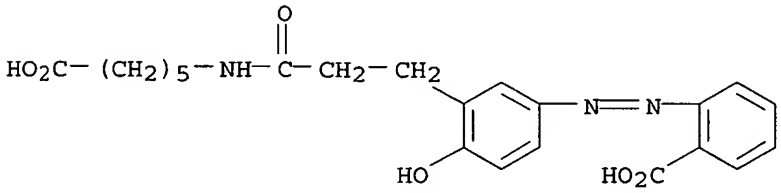
RN 219531-99-4 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



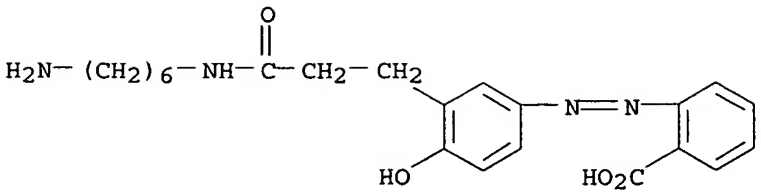
RN 268544-30-5 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[(1,1-dimethylethoxy)carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 268544-33-8 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(5-carboxypentyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



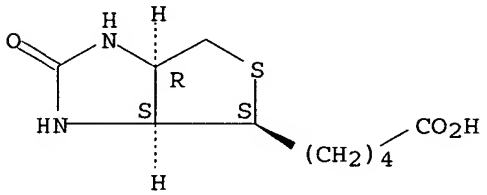
RN 268564-09-6 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

IT **58-85-5**, Biotin
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(technol. using avidin and; avidin derivs. conjugated with 4'-hydroxyazobenzene-2-carboxylic acids and uses thereof)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 7 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 7
ACCESSION NUMBER: 2000:605303 HCAPLUS
DOCUMENT NUMBER: 134:39075
TITLE: A Labeling, Detection, and Purification System Based on 4-Hydroxyazobenzene-2-carboxylic Acid: An Extension of the **Avidin-Biotin** System
AUTHOR(S): Hofstetter, Heike; Morpurgo, Margherita; Hofstetter, Oliver; Bayer, Edward A.; Wilchek, Meir
CORPORATE SOURCE: Department of Biological Chemistry, Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Analytical Biochemistry (2000), 284(2), 354-366
CODEN: ANBCA2; ISSN: 0003-2697
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB We introduce a new nonradioactive, chromogenic label based on 4-hydroxyazobenzene-2-carboxylic acid (**HABA**), which is suitable for bioanal. application, e.g., detection, localization, isolation, and purification The **HABA** label is superior to other systems where it is difficult to sep. labeled from unlabeled mols. or to determine the amount of label. **HABA** is readily detected spectroscopically by its

absorption at 350 nm or by its interaction with **avidin** that results in a red shift to 500 nm. The **HABA** reagents described can be conjugated to a variety of functional groups on biomols. and purified thereafter by affinity chromatog. on an **avidin** column. The interaction of the HABAylated biomols. with their corresponding targets is detected with high-affinity anti-**HABA** **antibodies** or with **avidin**. The nonradioactive, chromogenic **HABA**-based reagents form a homogeneous system that can complement or replace systems where facile quantification of the label is desired. (c) 2000 Academic Press.

CC 9-14 (Biochemical Methods)
Section cross-reference(s): 25

IT **Immunoglobulins**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(G, conjugate with 4-hydroxyazobenzene-2-carboxylic acid derivs.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT Ovalbumin
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(conjugate with 4-hydroxyazobenzene-2-carboxylic acid derivs.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT Aldehydes, reactions
Thiols (organic), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(groups of biomols.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin** **-biotin** system)

IT Immunoassay
(immunoblotting; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin** **-biotin** system)

IT Hemocyanins
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(keyhole limpet, conjugates with 4-hydroxyazobenzene-2-carboxylic acid derivs.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin** **-biotin** system)

IT Hemocyanins
RL: RCT (Reactant); RACT (Reactant or reagent)
(keyhole limpet; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin** **-biotin** system)

IT Affinity chromatography
Chromophores
Functional groups
Immunization
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT **Antibodies**
RL: ANT (Analyte); BPN (Biosynthetic preparation); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)

(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT **Avidins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT Amino group
(of biomols.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT Proteins, general, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(separation; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT Albumins, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(serum, conjugate with 4-hydroxyazobenzene-2-carboxylic acid derivs.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT Lactalbumins
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(α-, conjugate with 4-hydroxyazobenzene-2-carboxylic acid derivs.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT Globulins, preparation
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(γ-, conjugate with 4-hydroxyazobenzene-2-carboxylic acid derivs.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT 9012-36-6P, Sepharose
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(conjugates with 4-hydroxyazobenzene-2-carboxylic acid derivs.; labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT **219532-00-0P 268544-34-9P 268544-38-3P**
268544-39-4P 268544-41-8P 313072-33-2P
313072-34-3P 313072-35-4P 313072-36-5P
313072-37-6P 313072-38-7P
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT **219531-99-4DP**, conjugate with Sepharose **313072-41-2DP**, conjugate with Sepharose
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)

(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT **219532-00-0DP**, conjugate with keyhole limpet hemocyanin
268544-34-9DP, conjugate with keyhole limpet hemocyanin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT 9001-63-2DP, Lysozyme, conjugate with 4-hydroxyazobenzene-2-carboxylic acid derivs. 9001-99-4DP, Ribonuclease, conjugate with 4-hydroxyazobenzene-2-carboxylic acid derivs. 9003-99-0DP, Peroxidase, conjugate with 4-hydroxyazobenzene-2-carboxylic acid derivs.
268544-41-8DP, conjugates with proteins
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

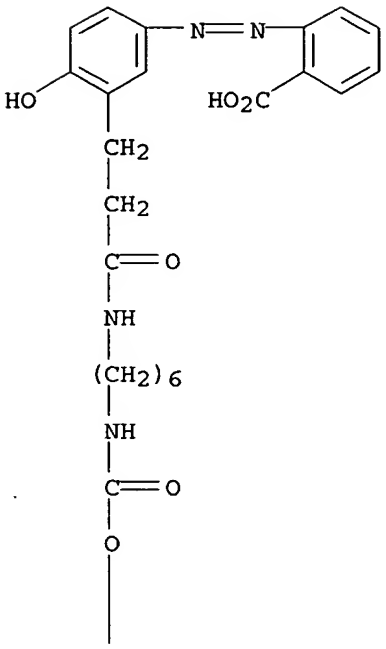
IT 495-78-3 583-17-5 4661-46-5 268544-20-3 268544-24-7 313072-39-8 313072-40-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

IT **219531-99-4P 268544-33-8P 268544-40-7P**
313072-30-9P 313072-31-0P 313072-32-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

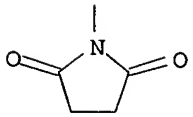
IT **219532-00-0P 268544-34-9P 268544-38-3P**
268544-39-4P 268544-41-8P 313072-33-2P
313072-34-3P 313072-35-4P 313072-36-5P
313072-37-6P 313072-38-7P
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

RN 219532-00-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

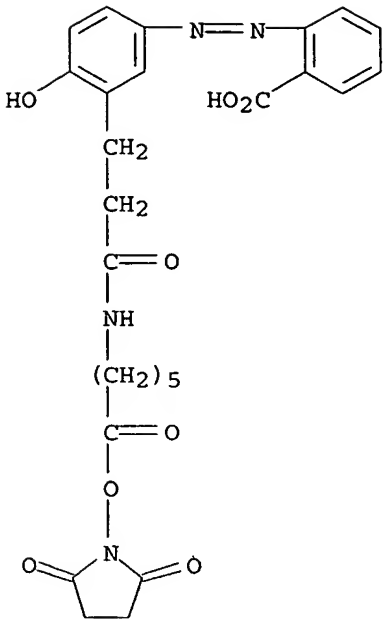
PAGE 1-A



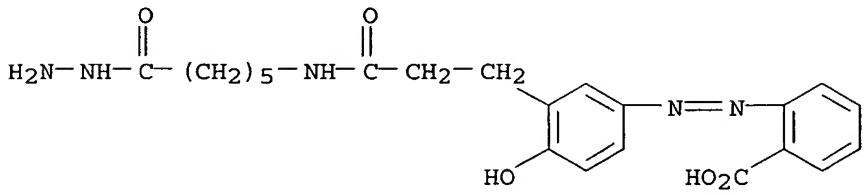
PAGE 2-A



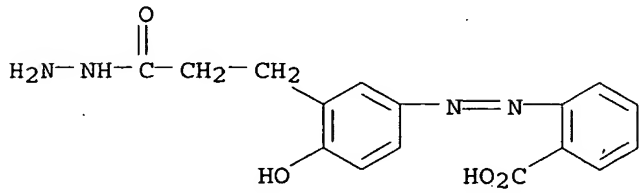
RN 268544-34-9 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



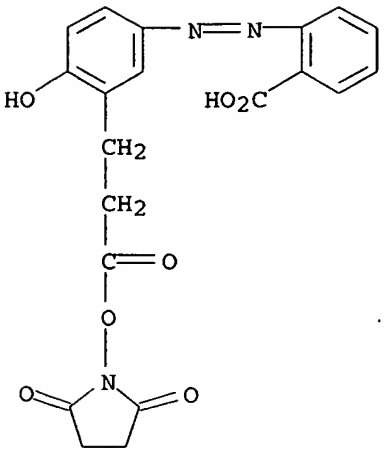
RN 268544-38-3 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-hydrazino-6-oxohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



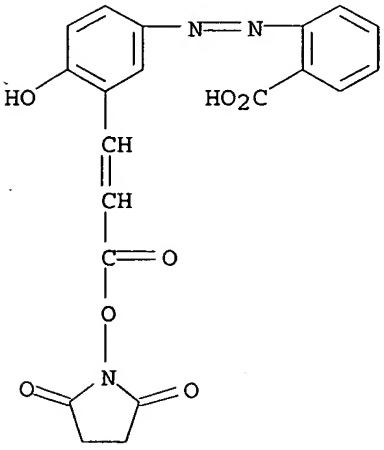
RN 268544-39-4 HCAPLUS
CN Benzenepropanoic acid, 5-[(2-carboxyphenyl)azo]-2-hydroxy-, α-hydrazide (9CI) (CA INDEX NAME)



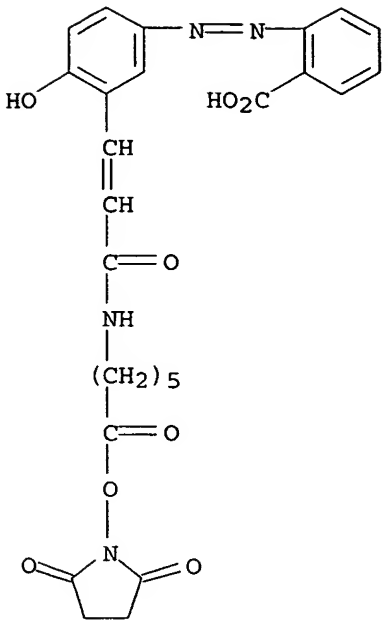
RN 268544-41-8 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 313072-33-2 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxo-1-propenyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 313072-34-3 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxo-1-propenyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 313072-35-4 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxo-1-propenyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

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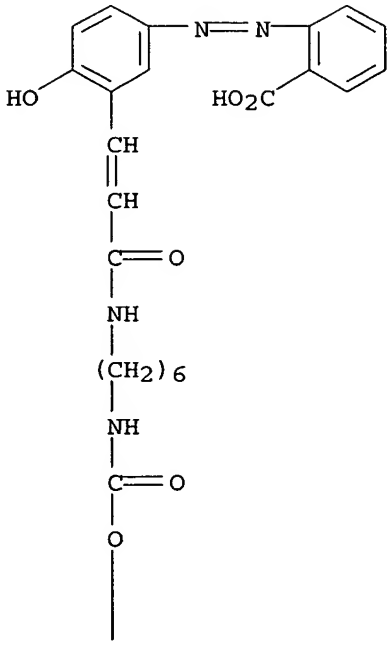

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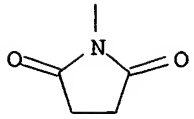

RN 313072-36-5 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[4-(2,5-dihydro-2,5-dioxo-1H-pyrrol-1-yl)-1-oxobutyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

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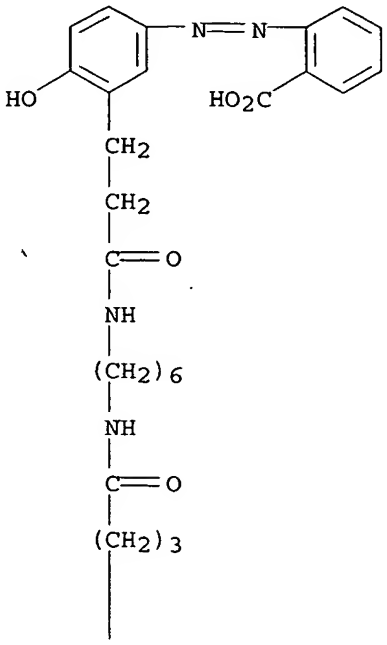

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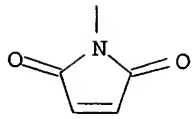
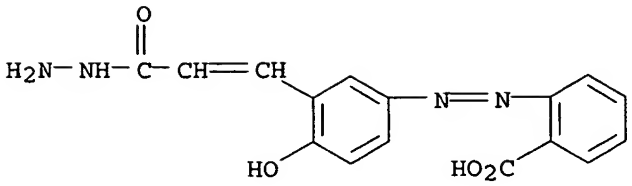
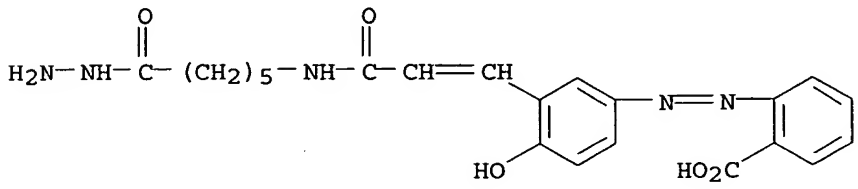


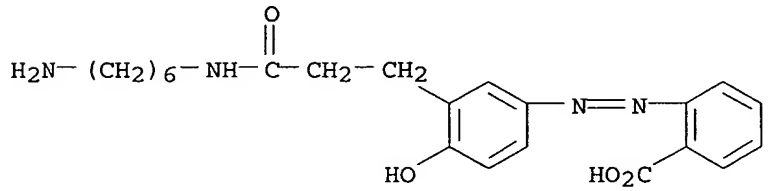
RN 313072-37-6 HCAPLUS
CN Benzoic acid, 2-[[3-(3-hydrazino-3-oxo-1-propenyl)-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



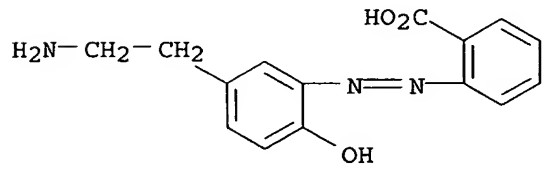
RN 313072-38-7 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-hydrazino-6-oxohexyl)amino]-3-oxo-1-propenyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



IT **219531-99-4DP**, conjugate with Sepharose **313072-41-2DP**, conjugate with Sepharose
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)
RN 219531-99-4 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 313072-41-2 HCAPLUS
CN Benzoic acid, 2-[[5-(2-aminoethyl)-2-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



IT **219532-00-0DP**, conjugate with keyhole limpet hemocyanin

268544-34-9DP, conjugate with keyhole limpet hemocyanin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-carboxylic acid as an extension of **avidin-biotin** system)

RN 219532-00-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

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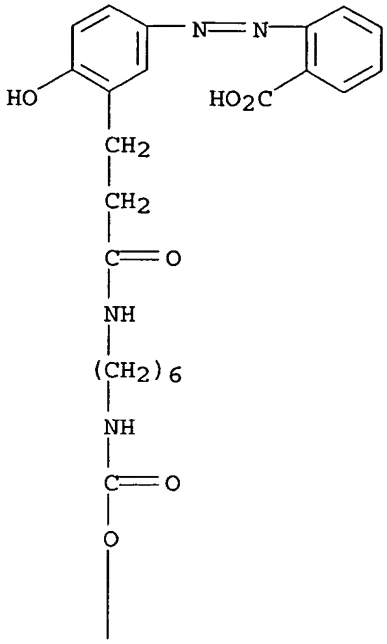
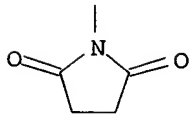
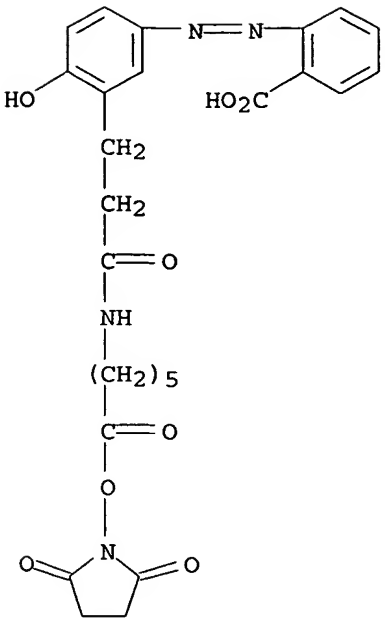


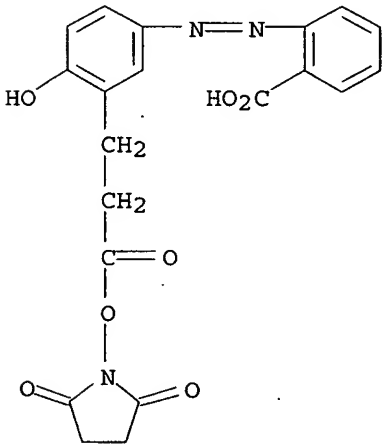
PAGE 2-A



RN 268544-34-9 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



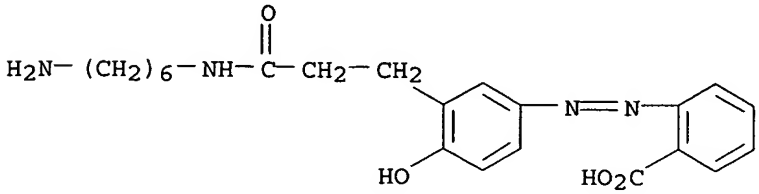
IT **268544-41-8DP**, conjugates with proteins
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-
carboxylic acid as an extension of **avidin-biotin** system)
RN 268544-41-8 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



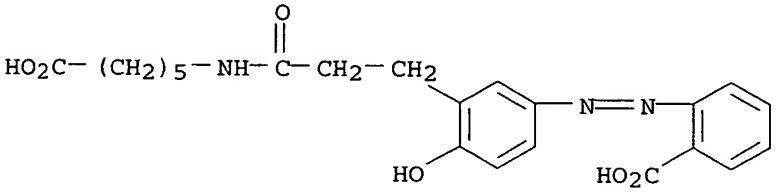
IT **219531-99-4P 268544-33-8P 268544-40-7P**
313072-30-9P 313072-31-0P 313072-32-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(labeling, detection, and purification system based on 4-hydroxyazobenzene-2-

carboxylic acid as an extension of **avidin-biotin** system)

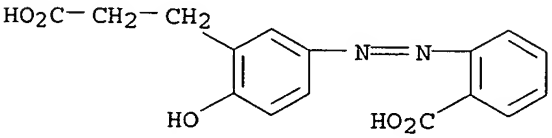
RN 219531-99-4 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



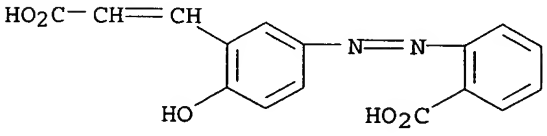
RN 268544-33-8 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(5-carboxypentyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



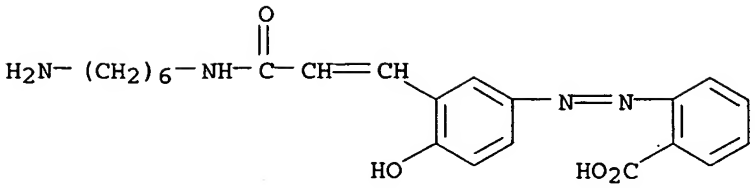
RN 268544-40-7 HCAPLUS
CN Benzenepropanoic acid, 5-[(2-carboxyphenyl)azo]-2-hydroxy- (9CI) (CA INDEX NAME)



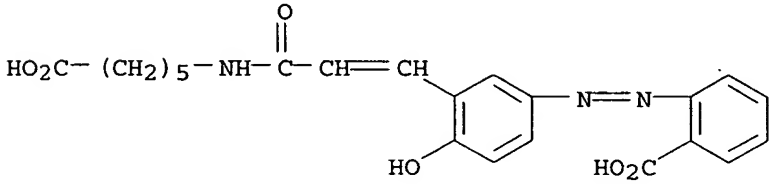
RN 313072-30-9 HCAPLUS
CN Benzoic acid, 2-[[3-(2-carboxyethenyl)-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 313072-31-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxo-1-propenyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 313072-32-1 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(5-carboxypentyl)amino]-3-oxo-1-propenyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 8 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 8
ACCESSION NUMBER: 1998:749838 HCAPLUS
DOCUMENT NUMBER: 130:91738
TITLE: A Chemical Approach To Illustrate the Principle of Signal Transduction Cascades Using the Avidin-Biotin System
AUTHOR(S): Morpurgo, Margherita; Hofstetter, Heike; Bayer, Edward A.; Wilchek, Meir
CORPORATE SOURCE: Department of Biological Chemistry, The Weizmann Institute of Science, Rehovot, 76100, Israel
SOURCE: Journal of the American Chemical Society (1998), 120(49), 12734-12739
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A new approach to illustrate the principle of signal transduction and to assemble protein multilayers is described. It is based on competing affinities of two different ligands for the same binding site of a protein. A low-affinity ligand can be attached covalently to the protein, where it will be buried in the binding site and thus be prevented to interact with other proteins that recognize it. However, if a high-affinity ligand (or a mol. containing this ligand) is added, it will displace the low-affinity ligand (which still remains covalently bound) from the binding site to the periphery. The low-affinity ligand is now available for interaction with other mols., thus providing the means through which to assemble multilayers of proteins by a recognition cascade. This principle was demonstrated using the protein avidin which binds two ligands, biotin and 4-hydroxyazobenzene-2-carboxylic acid (HABA), with markedly different affinities. Avidin was affinity labeled with HABA, the low-affinity ligand, to produce a red, covalently conjugated avidin-HABA derivative (red avidin). Anti-HABA antibodies failed to recognize HABA buried in the binding site of avidin. However,

upon addition of the high-affinity ligand biotin, HABA was expelled from the binding site and immediately bound by the **antibodies**. Multilayer assemblies of HABAylated avidin and biotinylated anti-HABA **antibodies** could thus be constructed. BThis concept may find application in numerous fields, such as medicine, diagnostics, nanotechnol., and artificial intelligence.

CC 6-1 (General Biochemistry)
Section cross-reference(s): 26

IT **Antibodies**
RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(biotinylated, anti-HABA; preparation of 4-hydroxyazobenzene-2-carboxylic acid-labeled avidin for use in a model chemical signal transduction cascade using the avidin-biotin system)

IT **58-85-5DP**, Biotin, protein conjugates **1634-82-8DP**, avidin conjugates
RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(preparation of 4-hydroxyazobenzene-2-carboxylic acid-labeled avidin for use in a model chemical signal transduction cascade using the avidin-biotin system)

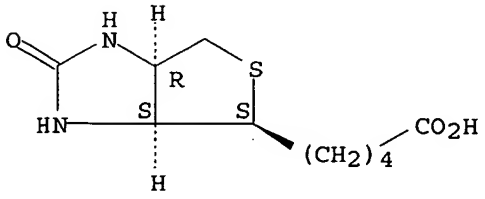
IT **58-85-5**, Biotin 118-92-3, Anthranilic acid 552-63-6, 3-(2-Hydroxyphenyl)propionic acid **9013-20-1**, Streptavidin 51857-17-1 74124-79-1, Disuccinimidyl carbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of 4-hydroxyazobenzene-2-carboxylic acid-labeled avidin for use in a model chemical signal transduction cascade using the avidin-biotin system)

IT **219531-99-4P 219532-00-0P 219532-01-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of 4-hydroxyazobenzene-2-carboxylic acid-labeled avidin for use in a model chemical signal transduction cascade using the avidin-biotin system)

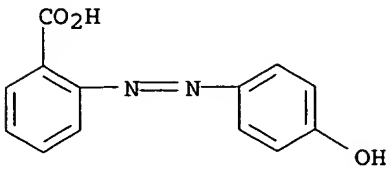
IT **58-85-5DP**, Biotin, protein conjugates **1634-82-8DP**, avidin conjugates
RL: BPR (Biological process); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(preparation of 4-hydroxyazobenzene-2-carboxylic acid-labeled avidin for use in a model chemical signal transduction cascade using the avidin-biotin system)

RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

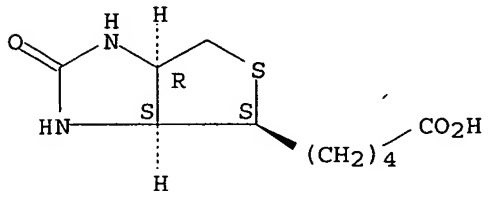


RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



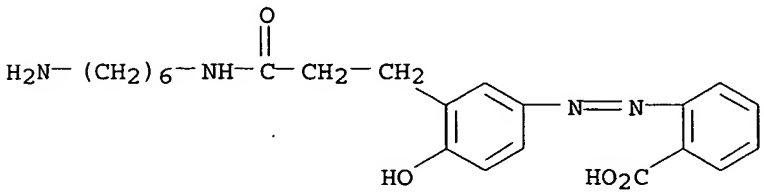
IT **58-85-5**, Biotin **9013-20-1**, Streptavidin
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of 4-hydroxyazobenzene-2-carboxylic acid-labeled avidin for use in a model chemical signal transduction cascade using the avidin-biotin system)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



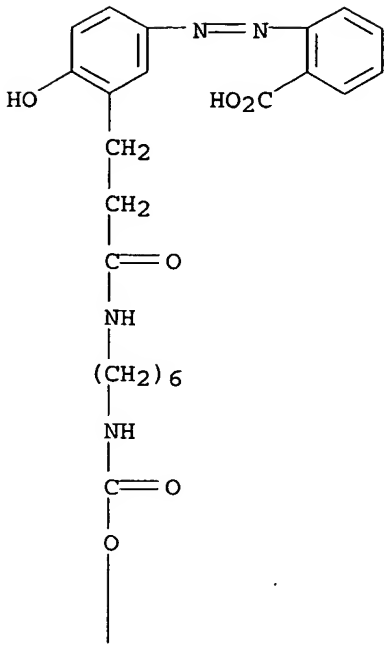
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **219531-99-4P 219532-00-0P 219532-01-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of 4-hydroxyazobenzene-2-carboxylic acid-labeled avidin for use in a model chemical signal transduction cascade using the avidin-biotin system)
RN 219531-99-4 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

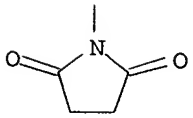


RN 219532-00-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

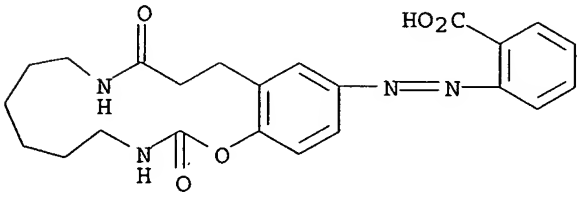
PAGE 1-A



PAGE 2-A



RN 219532-01-1 HCAPLUS
CN Benzoic acid, 2-[(2,3,4,5,6,7,8,9,10,11,12,13-dodecahydro-2,11-dioxo-1,3,10-benzoxadiazacyclopentadecin-15-yl)azo]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 9 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 9
ACCESSION NUMBER: 1997:390580 HCAPLUS
DOCUMENT NUMBER: 127:2745

TITLE: Reagent for the detection and isolation of carbohydrates or glycan receptors
INVENTOR(S): Watzele, Manfred; Fernholz, Erhard; Von Der Eltz, Herbert
PATENT ASSIGNEE(S): Boehringer Mannheim Gmbh, Germany
SOURCE: Eur. Pat. Appl., 29 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

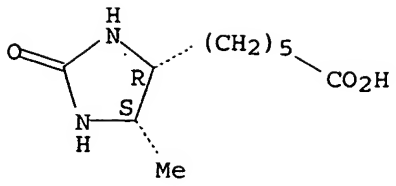
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 769490	A1	19970423	EP 1996-116773	19961018
EP 769490	B1	20011219		
R: DE, ES, FR, GB, IT				
DE 19539008	A1	19970424	DE 1995-19539008	19951019
US 6218546	B1	20010417	US 1996-733736	19961018
JP 09176106	A2	19970708	JP 1996-277834	19961021
PRIORITY APPLN. INFO.:			DE 1995-19539008 A	19951019

OTHER SOURCE(S): MARPAT 127:2745

AB The finding concerns compds., which contain a chromophore and a ligand (e.g., biotin or a biotin derivative) that can bind to streptavidin and/or avidin, that are suitable for binding to mols. that contain an aldehyde, ketone, hemiacetal, and/or hemiketal function. The finding also concerns conjugates formed from these compds. as well as a method for detecting or isolating carbohydrates or glycan receptors by using such conjugates.

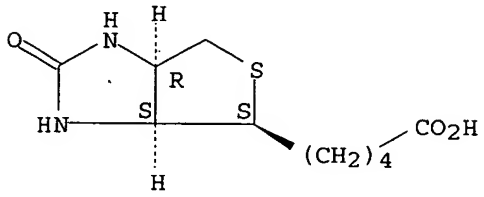
IC ICM C07C245-08
ICS C07D495-04; C07D333-00; G01N033-53
CC 9-15 (Biochemical Methods)
Section cross-reference(s): 80
IT **Antibodies**
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP (Preparation)
(antiglycan; reagent for detecting and isolating carbohydrates or glycan receptors)
IT **533-48-2**, Desthiobiotin 1672-46-4D, Digoxigenin, lectins labeled with 13395-35-2, Iminobiotin 22342-46-7, Diaminobiotin
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(reagent for detecting and isolating carbohydrates or glycan receptors)
IT **58-85-5**, Biotin **58-85-5D**, Biotin, derivs.
9013-20-1, Streptavidin
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(reagent for detecting and isolating carbohydrates or glycan receptors)
IT 107-15-3, 1,2-Ethanediamine, reactions 870-46-2, tert-Butyl carbazate **1634-82-8** 6066-82-6, N-Hydroxysuccinimide
RL: RCT (Reactant); RACT (Reactant or reagent)
(reagent for detecting and isolating carbohydrates or glycan receptors)
IT **533-48-2**, Desthiobiotin
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(reagent for detecting and isolating carbohydrates or glycan receptors)
RN 533-48-2 HCAPLUS
CN 4-Imidazolidinehexanoic acid, 5-methyl-2-oxo-, (4R,5S)- (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



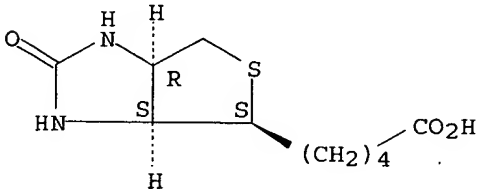
IT **58-85-5**, Biotin **58-85-5D**, Biotin, derivs.
9013-20-1, Streptavidin
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(reagent for detecting and isolating carbohydrates or glycan receptors)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



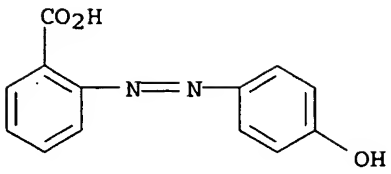
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **1634-82-8**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reagent for detecting and isolating carbohydrates or glycan receptors)
RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



L34 ANSWER 10 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 10
ACCESSION NUMBER: 1996:705679 HCAPLUS
DOCUMENT NUMBER: 125:339039
TITLE: Microcapsules of pre-determined peptide(s) specificity(ies), their preparation and uses
INVENTOR(S): Speaker, Tully J.; Sultzbaugh, Kenneth J.
PATENT ASSIGNEE(S): Temple University, USA
SOURCE: PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9629059	A1	19960926	WO 1996-US3666		19960318
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI					
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
US 5686113	A	19971111	US 1995-408052		19950321
CA 2212744	AA	19960926	CA 1996-2212744		19960318
AU 9653148	A1	19961008	AU 1996-53148		19960318
EP 817617	A1	19980114	EP 1996-909753		19960318
EP 817617	B1	20030514			
R: DE, FR, GB, IT					
JP 11502817	T2	19990309	JP 1996-528543		19960318
PRIORITY APPLN. INFO.:			US 1995-408052	A	19950321
			WO 1996-US3666	W	19960318

AB An aqueous core microcapsule has a capsular wall provided with a peptide(s) of pre-determined binding specificity(ies) appended to the surface, the wall being the reaction product of an anionic polymer or salt thereof and a polyamine, salt thereof, mixts. thereof, or mixts. thereof with monoamines. The aqueous core may contain an active ingredient(s), and be targeted for delivery to specific cell tissues. The microcapsules are provided as a composition and in a kit with instructions for use in imaging, diagnosis, therapy, vaccination, and other applications. Spermine/alginate microcapsules were prepared by addition of nominally 8 + 10-7 μL droplets of a 0.05% (weight/volume) aqueous Na alginate solution to a 0.05% (weight/volume) aqueous spermine-HCl solution at room temperature The resulting suspension of microcapsules was stirred to allow equilibration and then allowed to settle, the supernatant was removed, and microcapsules washed and stored at refrigerator temperature

IC ICM A61K009-16
ICS A61K009-50
CC 63-6 (Pharmaceuticals)
Section cross-reference(s): 5

IT **Antibodies**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fragments; polymeric microcapsules of predetd. peptide specificity for drug targeting in diagnosis and therapy)

IT **Immunoglobulins**
Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(A, polymeric microcapsules of predetd. peptide specificity for drug targeting in diagnosis and therapy)

IT **Immunoglobulins**
Proteins, specific or class
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(G, polymeric microcapsules of predetd. peptide specificity for drug targeting in diagnosis and therapy)

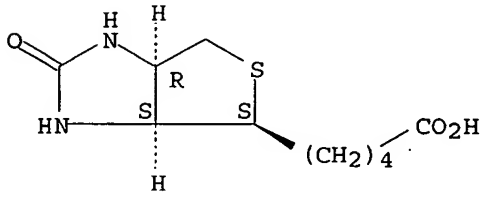
IT **Immunoglobulins**
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(M, polymeric microcapsules of predetd. peptide specificity for drug targeting in diagnosis and therapy)

IT 50-24-8, Prednisolone 51-21-8, Fluorouracil 53-86-1, Indomethacin 54-05-7, Chloroquine 58-55-9, Theophylline, biological studies **58-85-5**, Biotin **58-85-5D**, Biotin, conjugates 60-54-8, Tetracycline 61-73-4, Methylene blue 71-44-3, Spermine 72-57-1, Trypan blue 78-90-0, 1,2-Propanediamine 90-89-1, Diethylcarbamazine 98-92-0, Nicotinamide 107-15-3, 1,2-Ethanediamine, biological studies 110-60-1, 1,4-Butanediamine 110-85-0, Piperazine, biological studies 111-40-0 124-20-9, Spermidine 124-22-1, Dodecylamine 124-30-1, 1-Octadecanamine 126-07-8, Griseofulvin 130-95-0, Quinine 143-27-1, Hexadecylamine 143-74-8, Phenol red 462-94-2, 1,5-Pentanediamine 1120-49-6, Didecylamine 1271-42-7, Ferrocene carboxylic acid 1397-89-3, Amphotericin B **1634-82-8**, 2-(4'-Hydroxybenzene)azobenzoic acid 1892-57-5 2016-42-4, 1-Tetradecanamine 2016-57-1, 1-Decanamine 2321-07-5 4697-36-3, Carbenicillin 7440-57-5D, Gold, conjugates 9000-07-1, Carrageenan 9001-12-1, Collagenase 9001-40-5, Glucose 6-phosphate dehydrogenase 9001-62-1, Lipase 9002-01-1, Streptokinase 9002-07-7, Trypsin 9002-72-6, Somatotropin 9003-01-4, Polyacrylic acid 9003-20-7, Polyvinyl acetate 9004-10-8, Insulin, biological studies 9004-32-4 9004-38-0, Cellulose acetate phthalate 9004-61-9, Hyaluronic acid 9005-32-7, Alginic acid 9005-38-3, Sodium alginate 9005-49-6, Heparin, biological studies 9007-12-9, Calcitonin 9007-28-7, Chondroitin sulfate 9012-54-8, Cellulase **9013-20-1**, Streptavidin 9014-00-0, Luciferase 9015-68-3, Asparaginase 9031-11-2, Lactase 9032-43-3, Cellulose sulfate 9050-31-1, Hydroxypropyl methyl cellulose phthalate 11028-71-0, Concanavalin A 11096-26-7, Erythropoietin 13558-31-1D, derivs. 16423-68-0, Erythrosin 17372-87-1, Eosin 22204-53-1, Naproxen 22799-81-1 23214-92-8, Doxorubicin 25962-31-6, 3H-Acetic anhydride 27072-45-3, Fluorescein isothiocyanate 31566-31-1, Glyceryl monostearate 32609-14-6, Arabic acid 36877-69-7, Rhodamine isothiocyanate 37340-82-2, Streptodornase 55137-74-1, 14C-Acetic anhydride 55268-74-1, Praziquantel 60520-47-0, Eosin isothiocyanate 65277-42-1, Ketoconazole 69468-17-3, Diaminobutane 70288-86-7, Ivermectin 82354-19-6, Texas red 82436-78-0, N-Hydroxysulfosuccinimide 87915-38-6, Dextran blue 139639-23-9, Tissue plasminogen activator 183452-12-2
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polymeric microcapsules of predetd. peptide specificity for drug targeting in diagnosis and therapy)

IT **58-85-5**, Biotin **58-85-5D**, Biotin, conjugates
1634-82-8, 2-(4'-Hydroxybenzene)azobenzoic acid **9013-20-1**

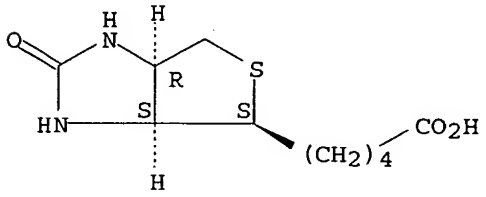
, Streptavidin
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polymeric microcapsules of predetd. peptide specificity for drug targeting in diagnosis and therapy)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

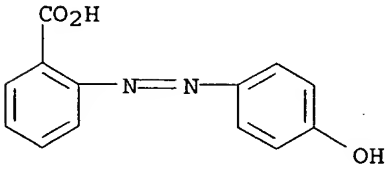


RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L34 ANSWER 11 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 11
ACCESSION NUMBER: 1996:65004 HCAPLUS
DOCUMENT NUMBER: 124:194284
TITLE: Reagents and methods for the rapid and quantitative assay of pharmacological agents
INVENTOR(S): Yan, Cheng F.; Oh, Chan S.; Cheng, Anthony K.
PATENT ASSIGNEE(S): Beckman Instruments, Inc., USA
SOURCE: PCT Int. Appl., 125 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9532428	A1	19951130	WO 1995-US6367	19950522
W: AU, CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5747352	A	19980505	US 1994-248479	19940523
CA 2166712	AA	19951130	CA 1995-2166712	19950522
AU 9525979	A1	19951218	AU 1995-25979	19950522
AU 703171	B2	19990318		
EP 710361	A1	19960508	EP 1995-920564	19950522
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 09501505	T2	19970210	JP 1995-530449	19950522
PRIORITY APPLN. INFO.:			US 1994-248479 A	19940523
			WO 1995-US6367 W	19950522

AB Bidentate reagents for rapidly and quant. assaying the concentration of pharmacol. agents in biol. samples are described. The reagents are used in an immunoassay format for determining the concentration of desired, preselected pharmacol. agents, e.g. benzoylecgonine, cocaine, an opiate, PCP, digoxigenin, acetaminophen, carbamazepine, phenytoin, primidone, theophylline, an aminoglycoside antibiotic, vancomycin, quinidine or a cannabinoid.

IC ICM G01N033-543
ICS G01N033-58; G01N033-94; G01N033-545; G01N033-546; G01N033-531; G01N033-532

CC 1-1 (Pharmacology)
Section cross-reference(s): 4

IT **Antibodies**
RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(anti-analyte; bidentate reagents and preparation thereof and methods for pharmacol. agent determination by immunoassay)

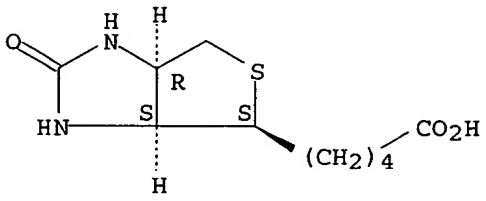
IT **58-85-5D**, Biotin, alkylamido derivs. 122-04-3, 4-Nitrobenzoyl chloride 123-30-8 124-09-4, 1,6-Hexanediamine, reactions 373-44-4, 1,8-Octanediamine 462-94-2, 1,5-Pentanediamine **1634-82-8**, 2-(4-Hydroxyphenylazo)benzoic acid 1892-57-5, 1-Ethyl-3-(3-dimethylaminopropyl)carbodiimide 6066-82-6, N-Hydroxysuccinimide 26763-71-3, Toluenesulfonyl chloride 62558-67-2 146486-92-2 171296-31-4 172887-74-0 172887-80-8 172887-83-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(bidentate reagents and preparation thereof and methods for pharmacol. agent determination by immunoassay)

IT **58-85-5D**, Biotin, analyte-spacer conjugates 108-30-5D, alkyldiamine adducts **9013-20-1D**, Streptavidin, immobilized 172887-85-3D, analyte-spacer conjugates
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(bidentate reagents and preparation thereof and methods for pharmacol. agent determination by immunoassay)

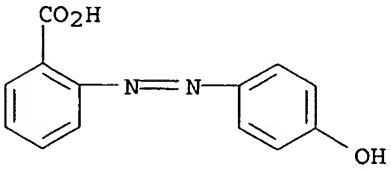
IT **58-85-5D**, Biotin, alkylamido derivs. **1634-82-8**, 2-(4-Hydroxyphenylazo)benzoic acid
RL: RCT (Reactant); RACT (Reactant or reagent)
(bidentate reagents and preparation thereof and methods for pharmacol. agent determination by immunoassay)

RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

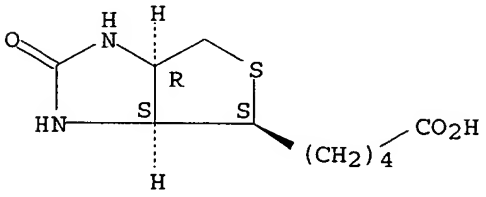


RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



IT **58-85-5D**, Biotin, analyte-spacer conjugates **9013-20-1D**, Streptavidin, immobilized
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(bidentate reagents and preparation thereof and methods for pharmacol. agent determination by immunoassay)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L34 ANSWER 12 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 12
ACCESSION NUMBER: 1995:316280 HCAPLUS
DOCUMENT NUMBER: 122:128105
TITLE: Surface-enhanced Raman spectroscopy (immuno)assay
INVENTOR(S): Tarcha, Peter J.; Rohr, Thomas E.; Markese, James J.; Cotton, Therese; Rospendowski, Bernard N.
PATENT ASSIGNEE(S): Abbott Laboratories, USA

SOURCE: U.S., 25 pp. Cont.-in-part of U.S. 5,266,498.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5376556	A	19941227	US 1992-944138	19920911
US 5266498	A	19931130	US 1991-790106	19911107
EP 587008	A1	19940316	EP 1993-113836	19930830
EP 587008	B1	19990210		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
AT 176727	E	19990215	AT 1993-113836	19930830
ES 2129474	T3	19990616	ES 1993-113836	19930830
CA 2105782	AA	19940312	CA 1993-2105782	19930909
AU 9346259	A1	19940317	AU 1993-46259	19930909
JP 06174723	A2	19940624	JP 1993-226084	19930910
JP 3444630	B2	20030908		
US 5567628	A	19961022	US 1994-268471	19940630

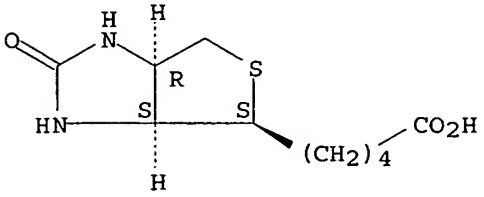
PRIORITY APPLN. INFO.: US 1989-428230 B1 19891027
US 1991-790106 A2 19911107
US 1992-944138 A 19920911

AB A method, composition, device, apparatus, and kit for the determination of the presence or amount of an analyte by monitoring an analyte-mediated ligand binding event in a test mixture which contains the analyte to be assayed, a specific binding member, a Raman-active label, and a particulate having a surface capable of inducing a surface-enhanced Raman light scattering. The test mixture is illuminated with a radiation sufficient to cause the Raman-active label in the test mixture to emit a detectable Raman spectrum. The differences in the detected surface-enhanced Raman scattering spectra are dependent upon the amount of the analyte present in the test mixture Thus, by monitoring these differences, the presence or amount of the analyte are determined An immunoassay for e.g. human chorionic gonadotropin is described.

IC ICM G01N033-553
INCL 436525000
CC 9-10 (Biochemical Methods)
IT **Antibodies**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(surface-enhanced Raman spectroscopy (immuno)assay)
IT **Antibodies**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(monoclonal, to human chorionic gonadotropin; surface-enhanced Raman spectroscopy (immuno)assay)
IT 58-55-9, Theophylline, analysis **58-85-5D**, Biotin, conjugates with albumin-DAB conjugate 9002-71-5, Thyroid-stimulating hormone
RL: ANT (Analyte); ANST (Analytical study)
(surface-enhanced Raman spectroscopy (immuno)assay)
IT **9013-20-1**, Streptavidin
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(surface-enhanced Raman spectroscopy (immuno)assay)
IT 58-55-9D, Theophylline, albumin conjugates 60-11-7D, p-Dimethylaminoazobenzene, anti-TSH **antibody** conjugates
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(surface-enhanced Raman spectroscopy (immuno)assay)
IT **1634-82-8**, 2-[4-Hydroxyphenylazo]benzoic acid
RL: ARU (Analytical role, unclassified); PRP (Properties); ANST

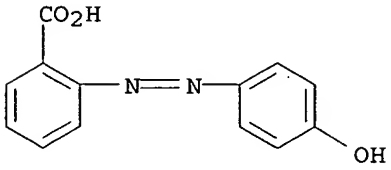
(Analytical study)
(surface-enhanced Raman spectroscopy (immuno)assay)
IT **58-85-5D**, Biotin, conjugates with albumin-DAB conjugate
RL: ANT (Analyte); ANST (Analytical study)
(surface-enhanced Raman spectroscopy (immuno)assay)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **9013-20-1**, Streptavidin
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(surface-enhanced Raman spectroscopy (immuno)assay)
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **1634-82-8**, 2-[4-Hydroxyphenylazo]benzoic acid
RL: ARU (Analytical role, unclassified); PRP (Properties); ANST (Analytical study)
(surface-enhanced Raman spectroscopy (immuno)assay)
RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



L34 ANSWER 13 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 13
ACCESSION NUMBER: 1994:265322 HCAPLUS
DOCUMENT NUMBER: 120:265322
TITLE: Surface-enhanced raman spectroscopy immunoassay or other specific-binding assay
INVENTOR(S): Tarcha, Peter J.; Rohr, Thomas E.; Markese, James J.; Cotton, Therese; Rospendowski, Bernard
PATENT ASSIGNEE(S): Abbott Laboratories, USA
SOURCE: Eur. Pat. Appl., 30 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 587008	A1	19940316	EP 1993-113836	19930830
EP 587008	B1	19990210		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
US 5376556	A	19941227	US 1992-944138	19920911
PRIORITY APPLN. INFO.:			US 1992-944138 A	19920911
			US 1989-428230 B1	19891027
			US 1991-790106 A2	19911107

AB A method, composition, device, apparatus, and kit for the determination of the presence or amount of an analyte by monitoring an analyte-mediated ligand binding event in a test mixture which contains the analyte to be assayed, a specific binding member, a Raman-active label, and a particulate having a surface capable of inducing a surface-enhanced Raman light scattering. The test mixture is illuminated with a radiation sufficient to cause the Raman-active label in the test mixture to emit a detectable Raman spectrum. The differences in the detected surface-enhanced Raman scattering spectra are dependent upon the amount of the analyte present in the test mixture Thus, by monitoring these differences, the presence or amount of the analyte are determined A SERRS-based immunoassay for human chorionic gonadotropin is described, as is e.g. no-wash detection of inhibition of binding of biotinylated albumin to streptavidin-coated silver colloids by SERRS.

IC ICM G01N033-553
ICS G01N021-65

CC 9-5 (Biochemical Methods)

IT **Antibodies**
RL: ANST (Analytical study)
(to TSH or hCG, in SERRS immunoassay)

IT **1634-82-8**, 2-(4-Hydroxyphenylazo)benzoic acid
RL: ANST (Analytical study)
(avidin binding to, SERRS assay in relation to)

IT 7440-57-5, Gold, uses
RL: USES (Uses)
(colloid, anti-hCG **antibody** labeled with, for SERRS immunoassay)

IT 60-11-7D, p-Dimethylaminoazobenzene, conjugates with anti-TSH **antibody**
RL: ANST (Analytical study)
(for SERRS immunoassay)

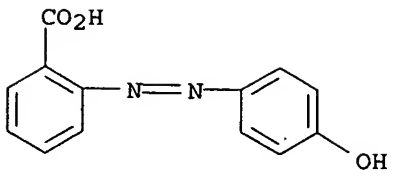
IT **58-85-5D**, Biotin, albumin conjugates
RL: ANST (Analytical study)
(silver colloid-coated streptavidin binding to, inhibition of, detection of, by SERRS)

IT **9013-20-1**, Streptavidin
RL: ANST (Analytical study)
(silver colloid-coated, biotinylated albumin binding to, inhibition of, detection of, by SERRS)

IT **1634-82-8**, 2-(4-Hydroxyphenylazo)benzoic acid
RL: ANST (Analytical study)
(avidin binding to, SERRS assay in relation to)

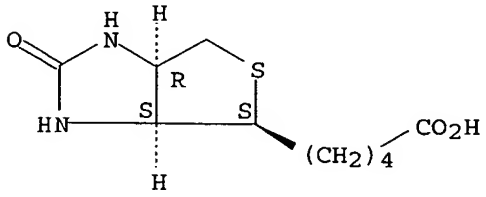
RN 1634-82-8 HCAPLUS

CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



IT **58-85-5D**, Biotin, albumin conjugates
RL: ANST (Analytical study)
(silver colloid-coated streptavidin binding to, inhibition of, detection of, by SERRS)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **9013-20-1**, Streptavidin
RL: ANST (Analytical study)
(silver colloid-coated, biotinylated albumin binding to, inhibition of, detection of, by SERRS)
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L34 ANSWER 14 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 14
ACCESSION NUMBER: 1993:599159 HCAPLUS
DOCUMENT NUMBER: 119:199159
TITLE: Bifunctional compounds useful in catalyzed reporter deposition
INVENTOR(S): Ebersole, Richard C.; Moran, John R.
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA
SOURCE: U.S., 15 pp. Cont.-in-part of U.S. Ser. No. 330,357, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5182203	A	19930126	US 1990-589874	19900928
CA 2013214	AA	19900929	CA 1990-2013214	19900328
CA 2013214	C	20020129		
ES 2063347	T3	19950101	ES 1990-905997	19900328
CA 2301818	C	20041026	CA 1990-2301818	19900328
US 5196306	A	19930323	US 1990-589719	19900928

US 5583001	A	19961210	US 1994-238186	19940504
US 5731158	A	19980324	US 1996-651012	19960520
PRIORITY APPLN. INFO.:			US 1989-330357	B2 19890329
			US 1990-494226	B2 19900320
			CA 1990-2013214	A3 19900328
			US 1990-589719	A3 19900928
			US 1992-914374	B1 19920715
			US 1994-238186	A3 19940504

OTHER SOURCE(S): MARPAT 119:199159

AB The bifunctional conjugates of the invention comprise (1) a member of a specific binding pair, (2) a blocking group which prevents binding with the other member of the binding pair until such time as the blocking group is removed or activated, and (3) a detectable label. The bifunctional conjugate is constructed for improving the amplification of detector signal via catalyzed reporter deposition. Thus, 6-(phenoxy-4'-azo-2"-carboxyethylphenyl)hexanoyl-alkaline phosphatase conjugate was prepared and used for amplification of detector signal in a mouse IgG assay using porcine liver esterase catalyzed reporter-enzyme deposition.

IC ICM C12N009-16
ICS C12N011-00; C12Q001-00; G01N033-534

INCL 435196000

CC 9-10 (Biochemical Methods)
Section cross-reference(s): 15

IT **Antibodies**
RL: ANST (Analytical study)
(in immunoassay using catalyzed enzyme reporter deposition, with bifunctional hydroxyphenylazobenzoic acid analogs or biotin analogs)

IT **Immunoglobulins**
RL: ANT (Analyte); ANST (Analytical study)
(G, determination of, by immunoassay using catalyzed enzyme reporter deposition, preparation of bifunctional hydroxyphenylazobenzoic acid analogs or biotin analogs for)

IT **1634-82-8D**, analogs
RL: ANST (Analytical study)
(bifunctional, for immunoassay using catalyzed enzyme reporter deposition)

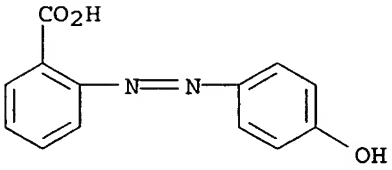
IT **58-85-5D**, Biotin, analogs and tyramine reaction products
9003-99-0D, Peroxidase, conjugates with **antibody** or streptavidin
RL: ANST (Analytical study)
(for immunoassay using catalyzed enzyme reporter deposition)

IT **9013-20-1D**, Streptavidin???, peroxidase conjugates
RL: ANST (Analytical study)
(in immunoassay using catalyzed enzyme reporter deposition)

IT 9013-79-0DP, Esterase, conjugates with tyramine and N-succinimidyl 6-phyenoxy-(4'-azo-2"-carboxyethylphenyl)hexanoate **134637-49-3P** **147861-21-0P** **147861-22-1P** **147861-23-2P** **147861-27-6P** 147894-38-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of bifunctional conjugate, for immunoassay using catalyzed enzyme reporter deposition)

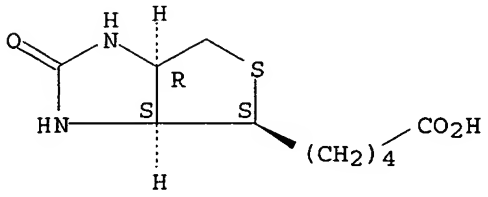
IT 51-67-2DP, Tyramine, reaction products with N-succinimidyl 6-phyenoxy-(4'-azo-2"-carboxyethylphenyl)hexanoate and esterase and with biotin 9001-78-9DP, Alkaline phosphatase, reaction products with hydroxyphenylazobenzoate derivative 126513-34-6P **147861-22-1DP**, reaction products with alkaline phosphatase **147861-25-4P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, in preparation of bifunctional conjugate, for immunoassay using

catalyzed enzyme reporter deposition)
IT 538-75-0, DCC 576-19-2, Biocytin 1161-13-3 **1634-82-8**
5470-11-1, Hydroxylamine hydrochloride 6066-82-6, N-Hydroxysuccinimide
9001-78-9, Alkaline phosphatase 9013-79-0, Esterase 34071-95-9
35013-72-0, Biotin N-hydroxysuccinimide ester 56602-33-6, BOP
hexafluorophosphate 67899-04-1, tert-Butyl 6-iodohexanoate 81016-87-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of bifunctional conjugate, for immunoassay using catalyzed enzyme reporter deposition)
IT **1634-82-8D**, analogs
RL: ANST (Analytical study)
(bifunctional, for immunoassay using catalyzed enzyme reporter deposition)
RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



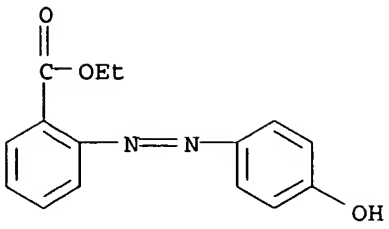
IT **58-85-5D**, Biotin, analogs and tyramine reaction products
RL: ANST (Analytical study)
(for immunoassay using catalyzed enzyme reporter deposition)
RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

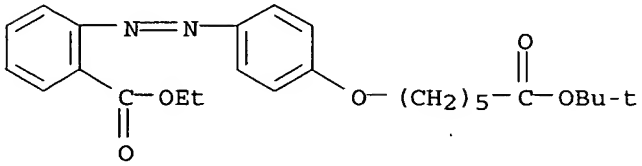


IT **9013-20-1D**, Streptavidin???, peroxidase conjugates
RL: ANST (Analytical study)
(in immunoassay using catalyzed enzyme reporter deposition)
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **134637-49-3P 147861-21-0P 147861-22-1P**
147861-23-2P 147861-27-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and reaction of, in preparation of bifunctional conjugate, for immunoassay using catalyzed enzyme reporter deposition)
RN 134637-49-3 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]-, ethyl ester (9CI) (CA INDEX NAME)

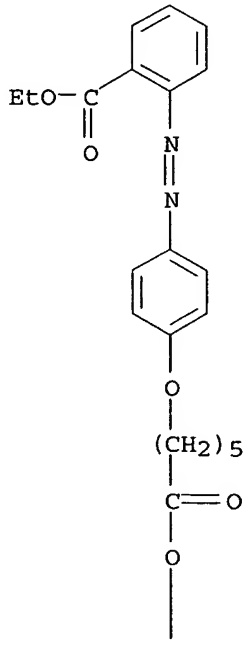


RN 147861-21-0 HCAPLUS
CN Benzoic acid, 2-[[4-[[6-(1,1-dimethylethoxy)-6-oxohexyl]oxy]phenyl]azo]-, ethyl ester (9CI) (CA INDEX NAME)

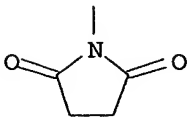


RN 147861-22-1 HCAPLUS
CN Benzoic acid, 2-[[4-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]oxy]phenyl]azo]-, ethyl ester (9CI) (CA INDEX NAME)

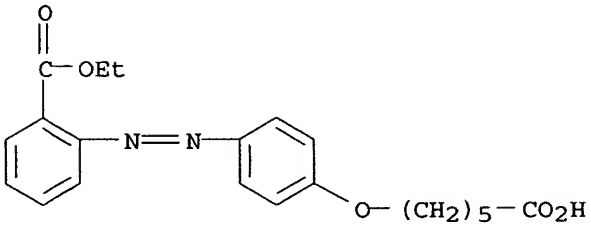
PAGE 1-A



PAGE 2-A



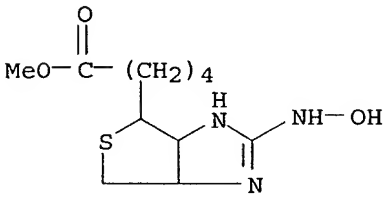
RN 147861-23-2 HCAPLUS
CN Benzoic acid, 2-[[4-[(5-carboxypentyl)oxy]phenyl]azo]-, 1-ethyl ester (9CI) (CA INDEX NAME)



RN 147861-27-6 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-(hydroxyimino)-, methyl ester, [3aS-(3aα,4β,6aα)]-, mono(trifluoroacetate) (salt) (9CI) (CA INDEX NAME)

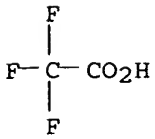
CM 1

CRN 147861-26-5
CMF C11 H19 N3 O3 S



CM 2

CRN 76-05-1
CMF C2 H F3 O2

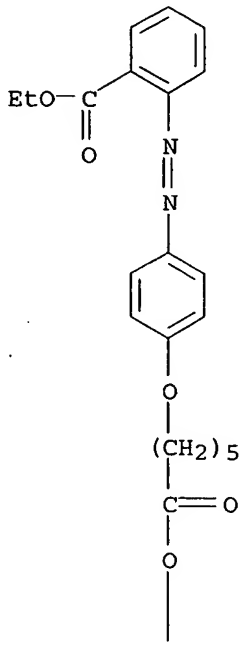


IT **147861-22-1DP**, reaction products with alkaline phosphatase
147861-25-4P

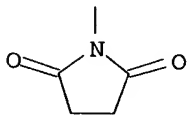
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of, in preparation of bifunctional conjugate, for immunoassay using
catalyzed enzyme reporter deposition)

RN 147861-22-1 HCAPLUS
CN Benzoic acid, 2-[[4-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]oxy]phenyl]azo]-, ethyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



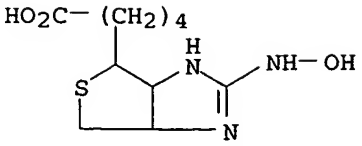
PAGE 2-A



RN 147861-25-4 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-(hydroxyimino)-, [3aS-(3aα,4β,6aα)]-, mono(trifluoroacetate) (salt) (9CI) (CA INDEX NAME)

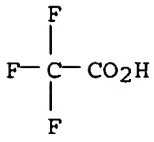
CM 1

CRN 147861-24-3
CMF C10 H17 N3 O3 S

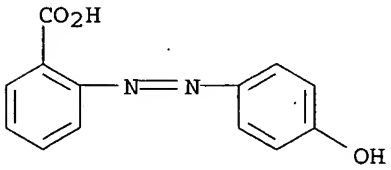


CM 2

CRN 76-05-1
CMF C2 H F3 O2

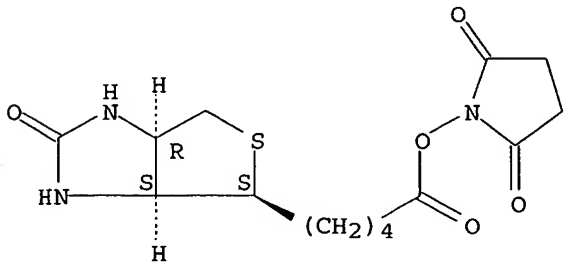


IT **1634-82-8 35013-72-0**, Biotin N-hydroxysuccinimide ester
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in preparation of bifunctional conjugate, for immunoassay using catalyzed enzyme reporter deposition)
RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



RN 35013-72-0 HCAPLUS
CN 2,5-Pyrrolidinedione, 1-[[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]oxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L34 ANSWER 15 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 15
ACCESSION NUMBER: 1991:467989 HCAPLUS
DOCUMENT NUMBER: 115:67989

TITLE: Analyte-dependent enzyme activation system with catalyzed reporter deposition
INVENTOR(S): Bobrow, Mark Norman; Ebersole, Richard Calvin; Litt, Gerald Joseph; Moran, John Richard
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA
SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9011523	A2	19901004	WO 1990-US1569	19900328
WO 9011523	A3	19910221		
W: AU, JP, SU				
RW: AT, BE, CH, DE, DK, ES, FR, GB, IT, LU, NL, SE				
CA 2013214	AA	19900929	CA 1990-2013214	19900328
CA 2013214	C	20020129		
AU 9054101	A1	19901022	AU 1990-54101	19900328
AU 645491	B2	19940120		
EP 465577	A1	19920115	EP 1990-905997	19900328
EP 465577	B1	19940316		
R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, SE				
JP 04504206	T2	19920730	JP 1990-505706	19900328
JP 2948904	B2	19990913		
AT 103071	E	19940415	AT 1990-905997	19900328
ES 2063347	T3	19950101	ES 1990-905997	19900328
RU 2102759	C1	19980120	RU 1990-5001818	19900328
CA 2301818	C	20041026	CA 1990-2301818	19900328
US 5196306	A	19930323	US 1990-589719	19900928
US 5583001	A	19961210	US 1994-238186	19940504
US 5731158	A	19980324	US 1996-651012	19960520

PRIORITY APPLN. INFO.:

US 1989-330357	A	19890329
US 1990-494226	A	19900320
CA 1990-2013214	A3	19900328
EP 1990-905997	A	19900328
WO 1990-US1569	A	19900328
US 1990-589719	A3	19900928
US 1992-914374	B1	19920715
US 1994-238186	A3	19940504

OTHER SOURCE(S): MARPAT 115:67989

AB A method is provided to catalyze reporter deposition to improve detection or quantitation of an analyte in a sample by amplifying the detector signal. The method comprises immobilizing an analyte-dependent enzyme activation system which catalyzes deposition of reporter by activating a conjugate consisting of a detectably labeled substrate specific for the enzyme system; said conjugate reacts with the analyte-dependent enzyme activation system to form an activated conjugate which deposits substantially wherever receptor for the activated conjugate is immobilized, said receptor not being reactive with the analyte-dependent enzyme activation system. In another embodiment, the invention concerns an assay for detecting or quantitating the presence or absence of an analyte in a sample using catalyzed reporter deposition to amplify the reporter signal. Also described are novel compds. which can be used as reagents to prepare 2-(4'-hydroxyphenylazo)benzoic acid (HABA)-type conjugates. The method of the invention is useful for immunoassays. Thus, biotin-N-hydroxysuccinimide was reacted with tyramine to form

biotin-tyramine, which was used in detector signal amplification in a mouse IgG assay with goat anti-mouse IgG-peroxidase conjugate and streptavidin-peroxidase conjugate. A graph showing amplification of the detected signal is given. Reporter deposition on nitrocellulose membranes and detector signal amplification in a human immunodeficiency virus p24 protein immunoassay are among other examples presented.

IC ICM G01N033-542
ICS G01N033-58; G01N033-535; G01N033-532

CC 9-2 (Biochemical Methods)
Section cross-reference(s): 15

IT **Antibodies**
RL: ANST (Analytical study)
(labeled, in analyte-dependent enzyme activation system with catalyzed reporter deposition for immunoassay)

IT **Immunoglobulins**
RL: ANT (Analyte); ANST (Analytical study)
(G, detection of, by immunoassay, analyte-dependent enzyme activation system with catalyzed reporter deposition for)

IT **Immunoglobulins**
RL: ANST (Analytical study)
(G, conjugates, with peroxidase and other enzymes, for analyte-dependent enzyme activation system with catalyzed reporter deposition for immunoassay)

IT **58-85-5D**, reaction products with tyramine 2321-07-5D, reaction product with tyramine 9001-78-9D, 6-[phenoxy-(4'-azo-2''-carboxyethylphenyl)hexanoyl conjugates 126513-34-6 **135244-49-4**
RL: PROC (Process)
(activation of, in analyte-dependent enzyme activation system with catalyzed reporter deposition for immunoassay)

IT 9003-99-0D, Peroxidase, IgG conjugates **9013-20-1D**, Streptavidin, peroxidase conjugates
RL: ANST (Analytical study)
(for analyte-dependent enzyme activation system with catalyzed reporter deposition in IgG immunochem. determination)

IT 9003-99-0, Peroxidase 9013-05-2, Phosphatase 9013-19-8, Isomerase **9013-20-1D**, Streptavidin, labeled 9013-79-0, Esterase 9027-41-2, Hydrolase 9031-11-2, β-Galactosidase 9031-56-5, Ligase 9032-92-2, Glycosidase 9047-61-4, Transferase 9055-04-3, Lyase 9055-15-6, Oxidoreductase 9001-37-0, Glucose oxidase 9001-78-9
RL: ANST (Analytical study)
(in analyte-dependent enzyme activation system with catalyzed reporter deposition for immunoassay)

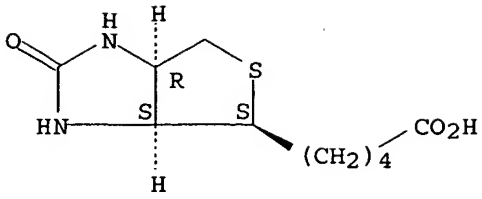
IT **35013-72-0**, Biotin-N-hydroxysuccinimide
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in biotin-tyramine conjugate preparation for analyte-dependent enzyme activation system with catalyzed reporter deposition for immunoassay)

IT **134637-49-3**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with streptavidin and esterase)

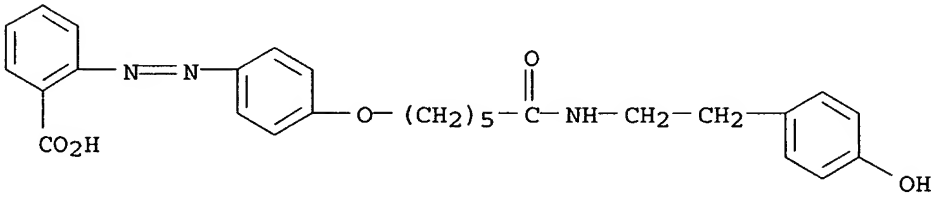
IT **58-85-5D**, reaction products with tyramine **135244-49-4**
RL: PROC (Process)
(activation of, in analyte-dependent enzyme activation system with catalyzed reporter deposition for immunoassay)

RN 58-85-5 HCAPLUS
CN 1H-Thieno[3,4-d]imidazole-4-pentanoic acid, hexahydro-2-oxo-, (3aS,4S,6aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



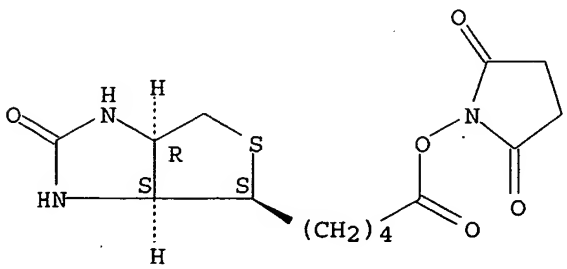
RN 135244-49-4 HCAPLUS
CN Benzoic acid, 2-[[4-[[6-[[2-(4-hydroxyphenyl)ethyl]amino]-6-oxohexyl]oxy]phenyl]azo]- (9CI) (CA INDEX NAME)



IT **9013-20-1D**, Streptavidin, peroxidase conjugates
RL: ANST (Analytical study)
(for analyte-dependent enzyme activation system with catalyzed reporter deposition in IgG immunochem. determination)
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

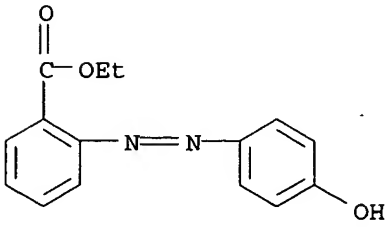
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RL: ANST (Analytical study)
(in analyte-dependent enzyme activation system with catalyzed reporter deposition for immunoassay
IT **35013-72-0**, Biotin-N-hydroxysuccinimide
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, in biotin-tyramine conjugate preparation for analyte-dependent enzyme activation system with catalyzed reporter deposition for immunoassay)
RN 35013-72-0 HCAPLUS
CN 2,5-Pyrrolidinedione, 1-[[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]oxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT **134637-49-3**

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with streptavidin and esterase)
RN 134637-49-3 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]-, ethyl ester (9CI) (CA INDEX NAME)



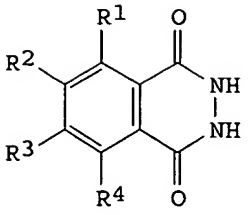
L34 ANSWER 16 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 16
ACCESSION NUMBER: 1987:172474 HCAPLUS
DOCUMENT NUMBER: 106:172474
TITLE: Chemiluminescence prolonged with nitrogen compounds for use in immunoassays, nucleotide probes, and test kits, and a device
INVENTOR(S): Dattagupta, Nanibhushan; Clemens, Anton H.
PATENT ASSIGNEE(S): Molecular Diagnostics, Inc., USA
SOURCE: Eur. Pat. Appl., 100 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 210449	A2	19870204	EP 1986-108890	19860630
EP 210449	A3	19870902		
EP 210449	B1	19930728		
R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
US 4794073	A	19881227	US 1985-753734	19850710
US 4853327	A	19890801	US 1985-753739	19850710
CA 1307480	A1	19920915	CA 1986-511781	19860617
AU 8659402	A1	19870115	AU 1986-59402	19860630
AU 593806	B2	19900222		
AT 92188	E	19930815	AT 1986-108890	19860630
FI 8602886	A	19870111	FI 1986-2886	19860708
DK 8603268	A	19870111	DK 1986-3268	19860709
ZA 8605115	A	19870527	ZA 1986-5115	19860709
ES 2000660	A6	19880316	ES 1986-220	19860709
JP 62124446	A2	19870605	JP 1986-162929	19860710
JP 2553519	B2	19961113		
US 4950588	A	19900821	US 1988-250985	19880927

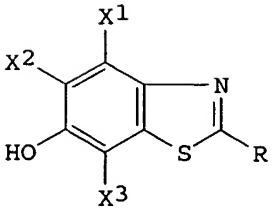
PRIORITY APPLN. INFO.:

US 1985-753734	A	19850710
US 1985-753739	A	19850710
US 1985-753749	A	19850710
US 1986-840636	A	19860320
EP 1986-108890	A	19860630

GI



I



II

AB A chemiluminescence (CL) process comprises contacting a CL precursor 2,3-dihydro-1,4-phthalazinedione I (R1, R2 = NH2; R1, R2, R3, R4 = H, (un)substituted C1-6 alkyl or alkenyl or alkoxy, OH, CO2H, NH2; R1R2 = (un)substituted amino benzo-group derivative), an oxidant, and an enzyme in the presence of a N compound (e.g. NH3, water-soluble organic amine) which prolongs the duration and increases the intensity of the light emitted. A CL enhancer, phenol derivs. or 6-hydroxybenzothiazoles II (R = H, CN, (un)substituted thiazole; X1, X2, X3 = H, (un)substituted C1-6 alkyl or alkenyl or alkoxy, (un)substituted OH, CO2H, (un)substituted NH2), may also be added. The CL reaction is used in the detection of nucleic acids, **antibodies**, antigens, and peroxidase and in light production Test kits and devices are also disclosed. Adenoviral DNA or pBR322 probe and aminomethyl angelicin (as photoreactive intercalator) were irradiated to form a covalent complex which was then reacted with N-hydroxysuccinimidobiotin to form the biotinylated hybridization probe. The probe was used in a dot-blot assay. DNA was detected by CL using streptavidin, biotinylated horseradish peroxidase, luminol and H2O2. Ammonium acetate in the buffer prolonged the CL reaction.

IC ICM G01N033-52
ICS G01N033-53; C12Q001-68

ICA G01N033-58; C12Q001-66

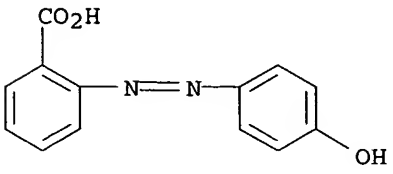
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 7, 15, 28

IT **Antibodies**
Antigens
RL: ANT (Analyte); ANST (Analytical study)
(detection of, by ammonia and amine-stabilized chemiluminescence assay)

IT **Immunoglobulins**
RL: PROC (Process)
(G, to rubella virus, detection of, of human, by ammonia and amine-stabilized chemiluminescence ELISA)

IT 92-04-6, 2-Chloro-4-phenylphenol 92-69-3, 4-Phenylphenol 92-88-6 95-77-2, 3,4-Dichlorophenol 98-54-4, 4-tert-Butylphenol 101-53-1, 4-Benzylphenol 106-41-2, 4-Bromophenol 106-44-5, uses and miscellaneous 106-48-9, 4-Chlorophenol 120-83-2, 2,4-Dichlorophenol 540-38-5, 4-Iodophenol 573-97-7, 1-Bromonaphth-2-ol 637-89-8 831-82-3, 4-Phenoxyphenol 1200-09-5 **1634-82-8** 1689-82-3, 4-(Phenylazo)phenol 1965-09-9 3558-83-6, 4-(4'-Hydroxyphenyl)benzophenone 3839-46-1 3964-56-5, 4-Bromo-2-chlorophenol 7400-08-0 13599-84-3D, 6-Hydroxybenzothiazole, derivs. 15015-57-3, 4-Hydroxyphenyldisulfide 15231-91-1, 6-Bromonaphth-2-ol 16239-18-2, 1,6-Dibromonaphth-2-ol 23795-02-0 28166-41-8, α-Cyano-4-hydroxycinnamic acid 92681-33-9 135-19-3, uses and miscellaneous
RL: ANST (Analytical study)
(chemiluminescence enhancement by ammonia and amines and, for

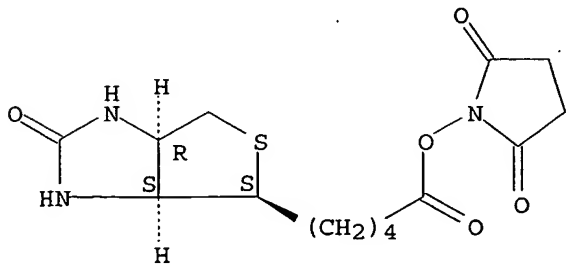
nucleotide hybridization probe and other assays)
IT **9013-20-1**, Streptavidin 7722-84-1, Hydrogen peroxide, uses and miscellaneous 9003-99-0, Peroxidase 9003-99-0D, Peroxidase, biotinylated
RL: ANST (Analytical study)
(in ammonia and amine-stabilized chemiluminescence nucleotide hybridization probe assay)
IT **35013-72-0**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aminomethyl-angelicin coupled nucleic acids)
IT **1634-82-8**
RL: ANST (Analytical study)
(chemiluminescence enhancement by ammonia and amines and, for nucleotide hybridization probe and other assays)
RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



IT **9013-20-1**, Streptavidin
RL: ANST (Analytical study)
(in ammonia and amine-stabilized chemiluminescence nucleotide hybridization probe assay)
RN 9013-20-1 HCAPLUS
CN Streptavidin (8CI, 9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **35013-72-0**
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with aminomethyl-angelicin coupled nucleic acids)
RN 35013-72-0 HCAPLUS
CN 2,5-Pyrrolidinedione, 1-[[5-[(3aS,4S,6aR)-hexahydro-2-oxo-1H-thieno[3,4-d]imidazol-4-yl]-1-oxopentyl]oxy]- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L34 ANSWER 17 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:935886 HCAPLUS
DOCUMENT NUMBER: 136:66584

TITLE: Rapid diagnostic method for distinguishing allergies and infections and nasal secretion collection unit
INVENTOR(S): Kudla, Ronald; Small, Parker; Huang, Shih-Wen
PATENT ASSIGNEE(S): University of Florida, USA
SOURCE: PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001098783	A2	20011227	WO 2001-US16216	20010518
WO 2001098783	A3	20020404		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6551791	B1	20030422	US 2000-597360	20000619
AU 2001064700	A5	20020102	AU 2001-64700	20010518
EP 1295128	A2	20030326	EP 2001-939150	20010518
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				

PRIORITY APPLN. INFO.:

US 2000-597360	A	20000619
US 1995-576604	B2	19951221
US 1996-621557	A2	19960325
WO 1999-US5751	A2	19990316
WO 2001-US16216	W	20010518

AB A method and device for rapidly, non-invasively and inexpensively differentiating between allergic rhinitis, upper respiratory tract viral infection and bacterial sinusitis, comprises a support strip upon which is fixed discrete indicators of pH, protein content, nitrite content, leukocyte esterase activity, and eosinophil content or other measure of a substance found in allergic secretions, such as TAME esterase, of a sample with which said reagent test strip is contacted. Contact of a nasal secretion with the device of this invention permits differentiation between allergic, bacterial and viral conditions, based on pH, protein content, leukocyte esterase activity, nitrite content, eosinophil content and TAME esterase activity. The invention further provides a novel means for collecting nasal secretions to facilitate differential diagnosis of sinusitis, upper respiratory tract viral infection and allergic rhinitis.

IC ICM G01N033-53
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 7, 14, 15
IT **Antibodies** and **Immunoglobulins**
RL: ARG (Analytical reagent use); DEV (Device component use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immobilized; rapid diagnostic method for distinguishing allergies and infections and nasal secretion collection unit)
IT **Antibodies** and **Immunoglobulins**
RL: ARG (Analytical reagent use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(labeled; rapid diagnostic method for distinguishing allergies and infections and nasal secretion collection unit)

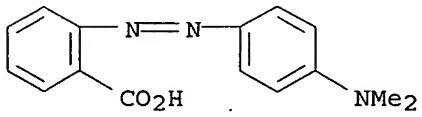
IT **Antibodies** and **Immunoglobulins**
Avidins
RL: ARG (Analytical reagent use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(rapid diagnostic method for distinguishing allergies and infections and nasal secretion collection unit)

IT 76-59-5, Bromthymol blue **493-52-7**, Methyl red
RL: ARG (Analytical reagent use); DEV (Device component use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(in pH indicator; rapid diagnostic method for distinguishing allergies and infections and nasal secretion collection unit)

IT 58-85-5, **Biotin** 58-85-5D, **Biotin**, labeled
100-01-6, biological studies 901-47-3, TAME 29542-03-8 244299-51-2
384378-29-4
RL: ARG (Analytical reagent use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(rapid diagnostic method for distinguishing allergies and infections and nasal secretion collection unit)

IT **493-52-7**, Methyl red
RL: ARG (Analytical reagent use); DEV (Device component use); DGN (Diagnostic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(in pH indicator; rapid diagnostic method for distinguishing allergies and infections and nasal secretion collection unit)

RN 493-52-7 HCAPLUS
CN Benzoic acid, 2-[[4-(dimethylamino)phenyl]azo]- (9CI) (CA INDEX NAME)



L34 ANSWER 18 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:335382 HCAPLUS
DOCUMENT NUMBER: 132:345163
TITLE: Azobenzene derivatives as labeling agents and intermediates thereof
INVENTOR(S): Wilchek, Meir; Bayer, Edward A.; Hofstetter, Heike; Morpurgo, Margherita
PATENT ASSIGNEE(S): Yeda Research and Development Co. Ltd., Israel
SOURCE: PCT Int. Appl., 61 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

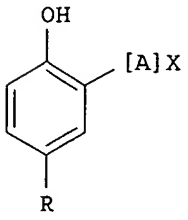
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000027813	A1	20000518	WO 1999-IL604	19991110

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,

MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI,
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6602987	B1	20030805	US 2001-831494		20010807
US 2004067229	A1	20040408	US 2003-441205		20030520
PRIORITY APPLN. INFO.:			IL 1998-126991	A	19981110
			WO 1999-IL604	W	19991110
			US 2001-831494	A3	20010807

OTHER SOURCE(S): MARPAT 132:345163
GI



I

AB Compound I (wherein R is H or -N=N-2-carboxyphenyl; A is (CH2)n or -CH=CH-, wherein n is an integer from 0 to 10, or A may also be -CH(COOH)- when R is -N=N-2-carboxyphenyl; and X is a radical selected from the group consisting of: (i) Cl; (ii) COOR1, wherein R1 is p-nitrophenyl or N-succinimidyl; (iii) CONH-NHR2, wherein R2 is H, COO(t-butyl) or COObenzyl; (iv) CONH-[B]-NHR3, wherein R3 is H, COOR1, or CO-[B']-maleimido, wherein R1 is t-Bu, p-nitrophenyl or N-succinimidyl, and B and B', the same or different, are (CH2)n wherein n is an integer from 2 to 10; (v) CONH-[B]- COOR4, wherein R4 is H, C1-C8 alkyl, N-succinimidyl; (vi) CONH-[B]-OH; (vii) CONH-[B]-CONH-NHR2, wherein R2 is H, COO(t-butyl) or COObenzyl; and (viii) NHR2, wherein R2 is H, COO(t-butyl) or COObenzyl, when A is -CH(COOH)- and R is -N=N-2-carboxyphenyl) are disclosed. The 4'-hydroxyazobenzene-2-carboxylic acid (**HABA**) compds. are novel reagents for labeling, isolating (e.g. by affinity chromatog.) and detecting (e.g. by immunoassay) biol. mols. **HABA** compds. were prepared and used to label various proteins such as BSA, keyhole limpet hemocyanin (KLH), and **antibodies**. HABAylated KLH was used as immunogen to prepare anti-**HABA antibodies** and monoclonal **antibodies**.

IC ICM C07D207-40
ICS C07D207-44; C07C245-08; C07C235-34; A61K031-192; A61P043-00

CC 9-14 (Biochemical Methods)
Section cross-reference(s): 15, 27

ST azobenzene deriv labeling detecting biomol; affinity chromatog biomol hydroxyazobenzene carboxylate label; immunoassay **HABA** label; protein labeling azobenzene deriv; **antibody** azobenzene deriv

IT **Immunoglobulins**
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(G, with **HABA** compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT Amino acids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL

(Biological study); PROC (Process)
(**HABA** compound-labeled **antibody** to; azobenzene derivs. as labeling agents and intermediates thereof)

IT **Avidins**
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(**HABA**-labeled mols. useful in technol. using **biotin** and; azobenzene derivs. as labeling agents and intermediates thereof)

IT Hybridoma
(anti-**HABA** monoclonal **antibodies** production; azobenzene derivs. as labeling agents and intermediates thereof)

IT Hemocyanins
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(conjugates, with **HABA** compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT Ovalbumin
RL: SPN (Synthetic preparation); PREP (Preparation)
(conjugates, with **HABA** compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT **Antibodies**
DNA
Glycoproteins, specific or class
Oligonucleotides
Oligosaccharides, biological studies
Peptides, biological studies
Polynucleotides
Polysaccharides, biological studies
Proteins, specific or class
RNA
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(conjugates, with hydroxyazobenzene-2-carboxylate compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT **Avidins**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(conjugates, with label; azobenzene derivs. as labeling agents and intermediates thereof)

IT **Antibodies**
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(labeled, to hydroxyazobenzene-2-carboxylate compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT **Antibodies**
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(monoclonal, to hydroxyazobenzene-2-carboxylate compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT Albumins, biological studies
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(serum, bovine, conjugates with **HABA** compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT **Antibodies**

RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); BPR (Biological process); BSU (Biological study, unclassified); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(to hydroxyazobenzene-2-carboxylate compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT Lactalbumins
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(α-, conjugates with **HABA** compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT Globulins, biological studies
RL: BUU (Biological use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(γ-, conjugates, with **HABA** compds.; azobenzene derivs. as labeling agents and intermediates thereof)

IT 58-85-5
RL: ARG (Analytical reagent use); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); NUU (Other use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
(**HABA**-labeled mols. useful in technol. using **avidin** and; azobenzene derivs. as labeling agents and intermediates thereof)

IT 268737-54-8P
RL: BPR (Biological process); BSU (Biological study, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(**avidin** purification with; azobenzene derivs. as labeling agents and intermediates thereof)

IT **1634-82-8DP**, 4'-Hydroxyazobenzene-2-carboxylic acid, conjugates
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(azobenzene derivs. as labeling agents and intermediates thereof)

IT **1634-82-8**, 4'-Hydroxyazobenzene-2-carboxylic acid
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(azobenzene derivs. as labeling agents and intermediates thereof)

IT 4048-33-3, 6-Aminohexanol 24535-13-5 61970-08-9D, Sepharose CL-4B, p-NO2-Ph carbonate-activated **219531-99-4 219532-00-0**
268544-19-0 268544-20-3 268544-21-4 268544-22-5 268544-23-6
268544-24-7 268544-25-8 268544-26-9 268544-27-0 268544-28-1
268544-29-2 **268544-30-5 268544-31-6**
268544-32-7 268544-33-8 268544-34-9
268544-35-0 268544-36-1 268544-37-2
268544-38-3 268544-39-4 268544-40-7
268544-41-8 268544-42-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(azobenzene derivs. as labeling agents and intermediates thereof)

IT **268544-41-8DP**, conjugates with proteins
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(azobenzene derivs. as labeling agents and intermediates thereof)

IT 9001-63-2DP, Lysozyme, conjugates with **HABA** compds.
9001-99-4DP, Ribonuclease, conjugates with **HABA** compds.
9003-99-0DP, Peroxidase, conjugates with **HABA** compds.
RL: SPN (Synthetic preparation); PREP (Preparation)
(azobenzene derivs. as labeling agents and intermediates thereof)

IT **219532-00-0DP**, conjugates with proteins
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP

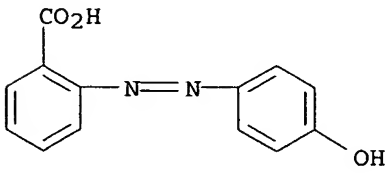
(Preparation); RACT (Reactant or reagent)
(in synthesis of labeling reagents; azobenzene derivs. as labeling agents and intermediates thereof)

IT **268544-31-6DP**, conjugates with proteins **268544-34-9DP**, conjugates with proteins **268544-43-0P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in synthesis of labeling reagents; azobenzene derivs. as labeling agents and intermediates thereof)

IT **1634-82-8DP**, 4'-Hydroxyazobenzene-2-carboxylic acid, conjugates
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); NUU (Other use, unclassified); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)
(azobenzene derivs. as labeling agents and intermediates thereof)

RN 1634-82-8 HCAPLUS

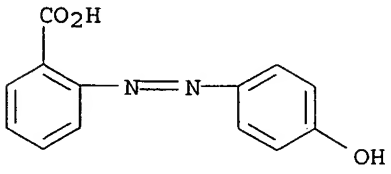
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



IT **1634-82-8**, 4'-Hydroxyazobenzene-2-carboxylic acid
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(azobenzene derivs. as labeling agents and intermediates thereof)

RN 1634-82-8 HCAPLUS

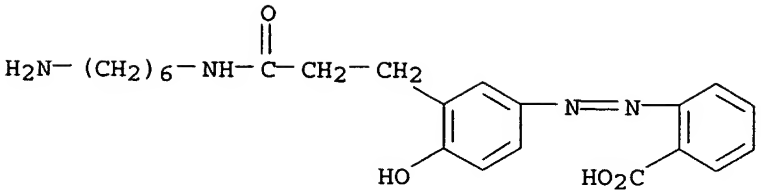
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



IT **219531-99-4 219532-00-0 268544-30-5**
268544-31-6 268544-32-7 268544-33-8
268544-34-9 268544-35-0 268544-36-1
268544-37-2 268544-38-3 268544-39-4
268544-40-7 268544-41-8 268544-42-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(azobenzene derivs. as labeling agents and intermediates thereof)

RN 219531-99-4 HCAPLUS

CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 219532-00-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

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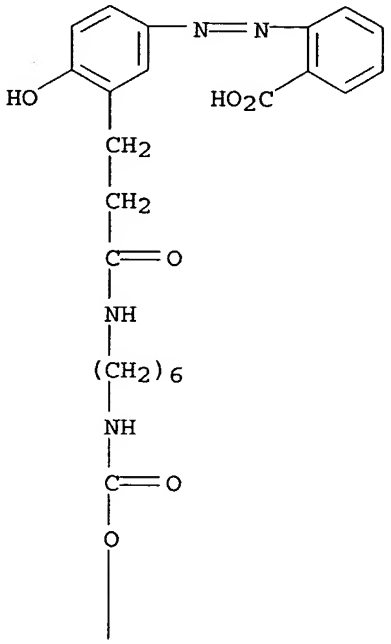

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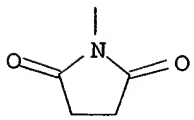
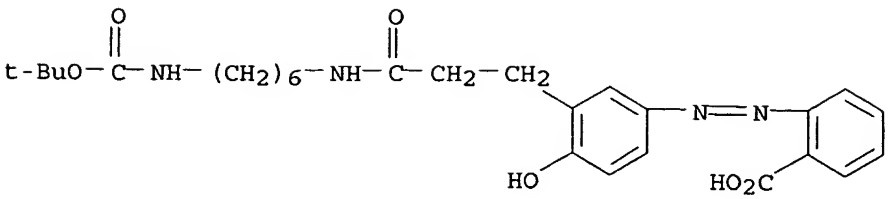
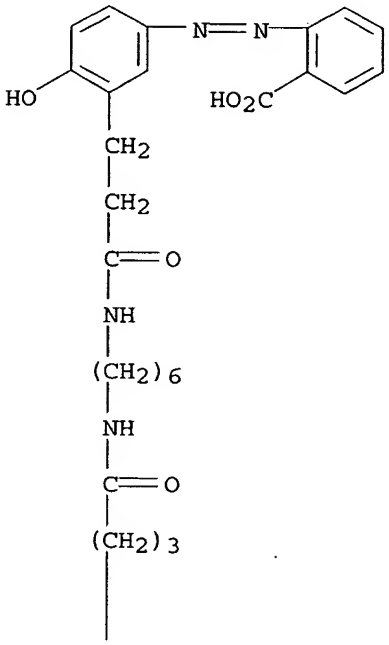


RN 268544-30-5 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[(1,1-dimethylethoxy)carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

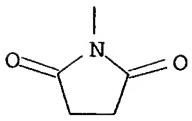


RN 268544-31-6 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[4-(2,5-dioxo-1-pyrrolidinyl)-1-oxobutyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

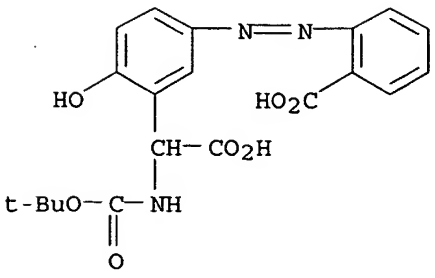
PAGE 1-A



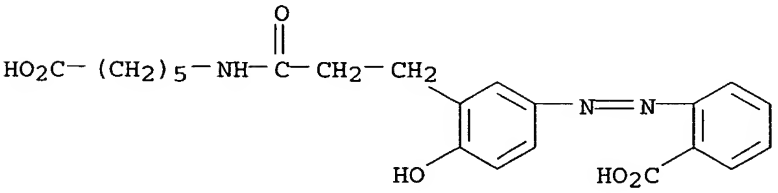
PAGE 2-A



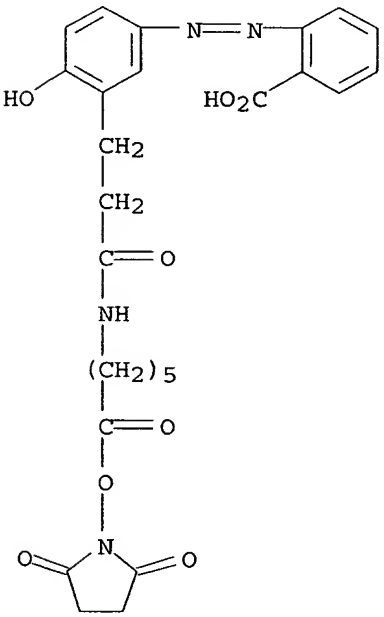
RN 268544-32-7 HCAPLUS
CN Benzeneacetic acid, 5-[(2-carboxyphenyl)azo]-α-[[(1,1-dimethylethoxy)carbonyl]amino]-2-hydroxy- (9CI) (CA INDEX NAME)



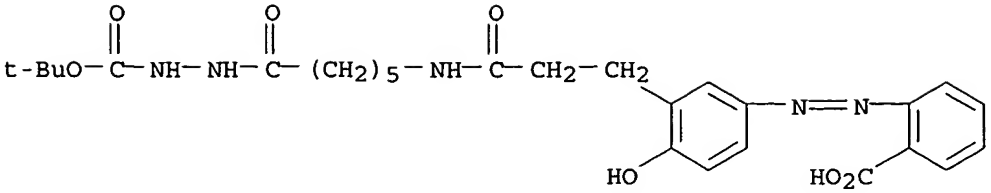
RN 268544-33-8 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(5-carboxypentyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



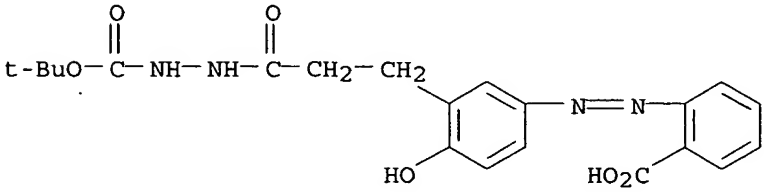
RN 268544-34-9 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



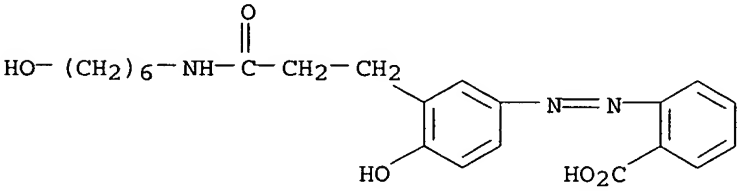
RN 268544-35-0 HCAPLUS
CN Hydrazinecarboxylic acid, 2-[6-[[3-[5-[(2-carboxyphenyl)azo]-2-hydroxyphenyl]-1-oxopropyl]amino]-1-oxohexyl]-, 1-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



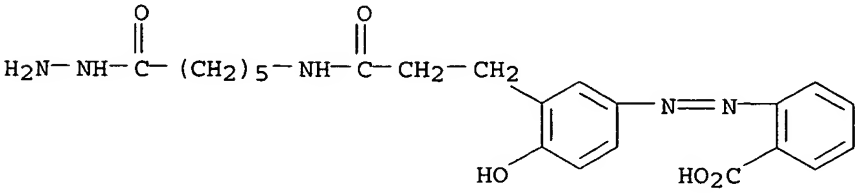
RN 268544-36-1 HCAPLUS
CN Hydrazinecarboxylic acid, 2-[3-[5-[(2-carboxyphenyl)azo]-2-hydroxyphenyl]-1-oxopropyl]-, 1-(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)



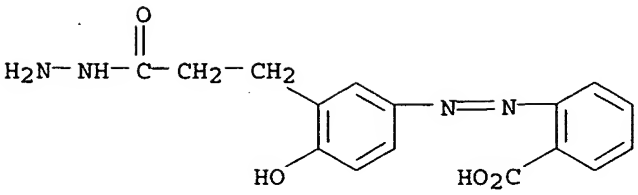
RN 268544-37-2 HCAPLUS
CN Benzoic acid, 2-[[4-hydroxy-3-[3-[(6-hydroxyhexyl)amino]-3-oxopropyl]phenyl]azo]- (9CI) (CA INDEX NAME)



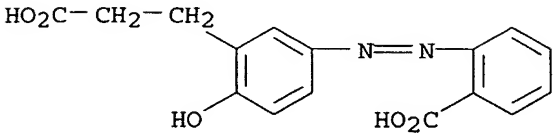
RN 268544-38-3 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-hydrazino-6-oxohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



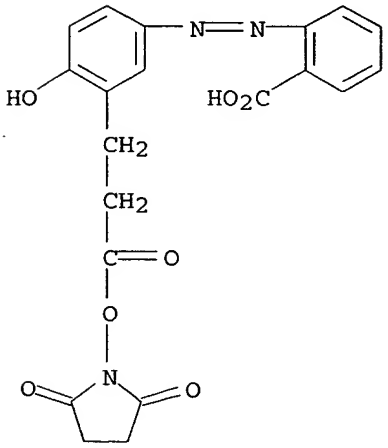
RN 268544-39-4 HCAPLUS
CN Benzenepropanoic acid, 5-[(2-carboxyphenyl)azo]-2-hydroxy-, α-hydrazide (9CI) (CA INDEX NAME)



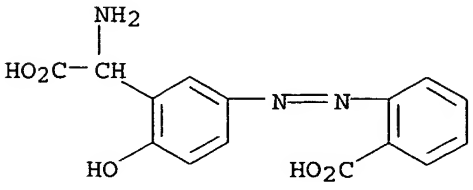
RN 268544-40-7 HCAPLUS
CN Benzenepropanoic acid, 5-[(2-carboxyphenyl)azo]-2-hydroxy- (9CI) (CA INDEX NAME)



RN 268544-41-8 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 268544-42-9 HCAPLUS
CN Benzeneacetic acid, α-amino-5-[(2-carboxyphenyl)azo]-2-hydroxy- (9CI) (CA INDEX NAME)

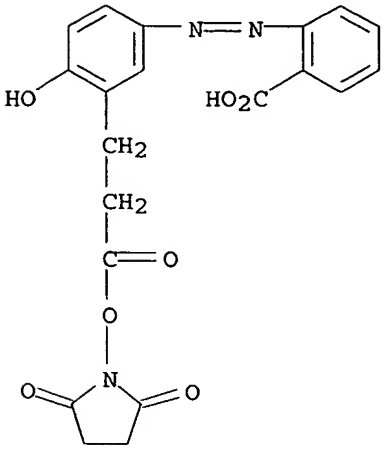


IT **268544-41-8DP**, conjugates with proteins

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(azobenzene derivs. as labeling agents and intermediates thereof)

RN 268544-41-8 HCAPLUS

CN Benzoic acid, 2-[[3-[3-[(2,5-dioxo-1-pyrrolidinyl)oxy]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

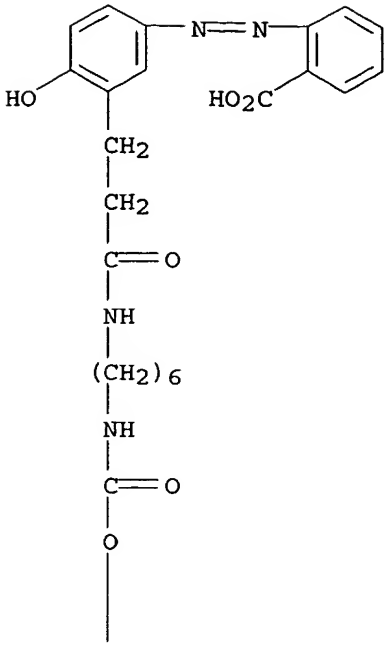


IT **219532-00-0DP**, conjugates with proteins
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in synthesis of labeling reagents; azobenzene derivs. as labeling agents and intermediates thereof)

RN 219532-00-0 HCAPLUS

CN Benzoic acid, 2-[[3-[3-[[6-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

PAGE 1-A



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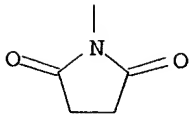
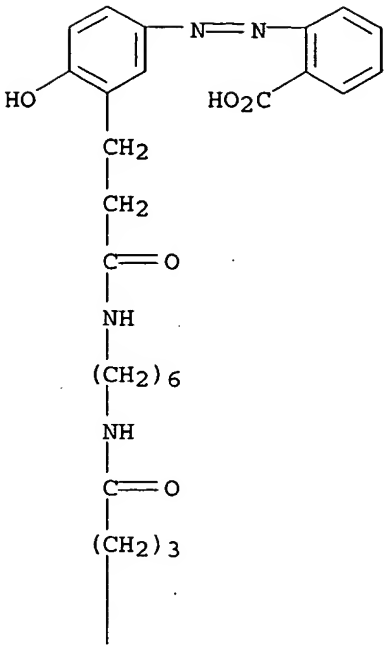


IT **268544-31-6DP**, conjugates with proteins **268544-34-9DP**, conjugates with proteins **268544-43-0P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(in synthesis of labeling reagents; azobenzene derivs. as labeling agents and intermediates thereof)
RN 268544-31-6 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[[4-(2,5-dioxo-1-pyrrolidinyl)-1-oxobutyl]amino]hexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)

PAGE 1-A



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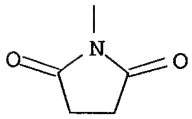
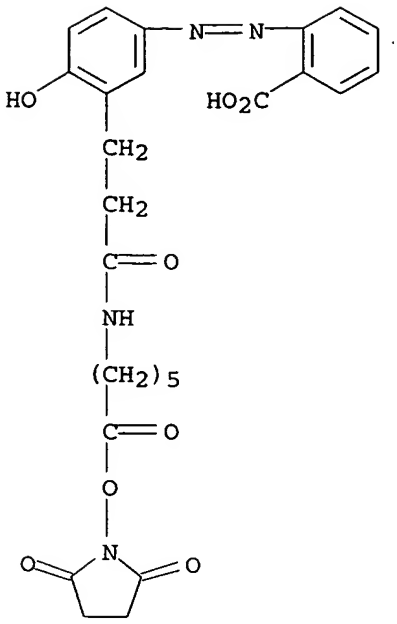
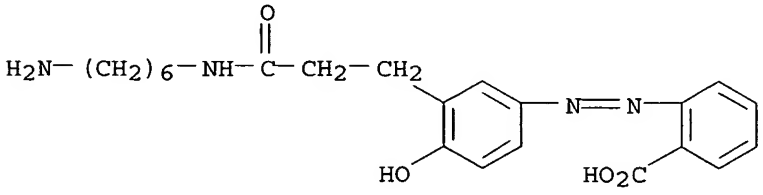


RN 268544-34-9 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]amino]-3-oxopropyl]-4-hydroxyphenyl]azo]- (9CI) (CA INDEX NAME)



RN 268544-43-0 HCAPLUS
CN Benzoic acid, 2-[[3-[3-[(6-aminohexyl)amino]-3-oxopropyl]-4-hydroxyphenyl]azo]-, hydrochloride (9CI) (CA INDEX NAME)



●x HCl

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 19 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:79575 HCAPLUS
DOCUMENT NUMBER: 128:190160
TITLE: The measuring method which utilizes the **antibody**
INVENTOR(S): Okamura, Akihiko
PATENT ASSIGNEE(S): Kyoto Daiichi Kagaku Co., Ltd, Japan; Acuray Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10031020	A2	19980203	JP 1996-219016	19960716
JP 3723826	B2	20051207		

PRIORITY APPLN. INFO.: JP 1996-219016 19960716

AB Disclosed is an immunoassay using **biotin** labeled **antibody** and **avidin**-2-(4'-hydroxyazobenzene)benzoic acid solution The method requires no separation of bound form and free form (B/F). Thus, C-reactive protein immunoassay was performed.

IC ICM G01N033-542
ICS G01N033-536

CC 9-10 (Biochemical Methods)

ST immunoassay antigen **antibody biotin avidin** **HABA**

IT Proteins, specific or class
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(C-reactive; immunoassay using **biotin** labeled **antibody** and **avidin**-2-(4'-hydroxyazobenzene)benzoic acid solution)

IT Immunoassay
(immunoassay using **biotin** labeled **antibody** and **avidin**-2-(4'-hydroxyazobenzene)benzoic acid solution)

IT **Antibodies**
RL: ANT (Analyte); ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(immunoassay using **biotin** labeled **antibody** and **avidin**-2-(4'-hydroxyazobenzene)benzoic acid solution)

IT Antigens
RL: ANT (Analyte); ARG (Analytical reagent use); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(immunoassay using **biotin** labeled **antibody** and **avidin**-2-(4'-hydroxyazobenzene)benzoic acid solution)

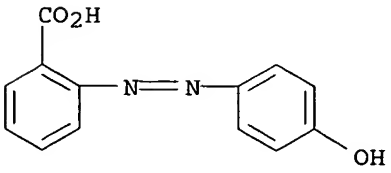
IT **Avidins**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(immunoassay using **biotin** labeled **antibody** and **avidin**-2-(4'-hydroxyazobenzene)benzoic acid solution)

IT 58-85-5, **Biotin** **1634-82-8**
RL: ARU (Analytical role, ~~unclassified); ANST (Analytical~~ study)
~~(immunoassay using~~ **biotin** labeled **antibody** and **avidin**-2-(4'-hydroxyazobenzene)benzoic acid solution)

IT **1634-82-8**
RL: ARU (Analytical role, unclassified); ANST (Analytical study)
(immunoassay using **biotin** labeled **antibody** and **avidin**-2-(4'-hydroxyazobenzene)benzoic acid solution)

RN 1634-82-8 HCAPLUS

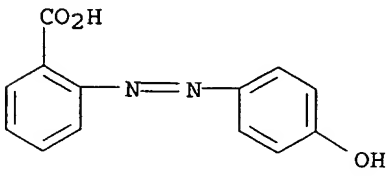
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



L34 ANSWER 20 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:210234 HCAPLUS
DOCUMENT NUMBER: 106:210234
TITLE: Design and characterization of molecular recognition site of bioaffinity sensor
AUTHOR(S): Aizawa, Masuo; Ikariyama, Yoshihito
CORPORATE SOURCE: Fac. Eng., Tokyo Inst. Technol., Tokyo, 152, Japan
SOURCE: Nippon Kagaku Kaishi (1987), (3), 463-71
CODEN: NKAKB8; ISSN: 0369-4577
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Aspects of biosensor construction are discussed with emphasis on the receptor, e.g. enzyme, **antibody**, binding protein, immobilized microbe, etc., for the analyte. **Biotin** is amperometrically determined in the concentration range of 10-9 .apprx.10-7 g/mL by heterologous recognition, i.e. an immobilized determinant analog is used, with 2-(4-**hydroxyphenylazo)benzoic** acid or lipoic acid as the determinant analog and **avidin** as a binding protein. A homologous recognition, i.e. utilizing an immobilized receptor, type of bioaffinity sensor for T4 covers the range of 10-8.apprx.10-5 g/mL. Insulin is optoelectronically determined in the range of 10-8 .apprx.10-6 g/mL by either homologous and heterologous recognition systems. Feasibility of bioaffinity sensors is discussed.
CC 9-1 (Biochemical Methods)
Section cross-reference(s): 2
ST biosensor analysis; **biotin** detn biosensor; thyroxine detn biosensor; insulin detn biosensor
IT 51-48-9, Thyroxin, analysis 58-85-5, **Biotin** 9004-10-8, Insulin, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, biosensor for)

L34 ANSWER 21 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:53895 HCAPLUS
DOCUMENT NUMBER: 110:53895
TITLE: Bioaffinity electrochemical sensor with preformed metastable ligand-receptor complex
AUTHOR(S): Aizawa, Masuo
CORPORATE SOURCE: Fac. Eng., Tokyo Inst. Technol., Tokyo, 152, Japan
SOURCE: Electrochem. Sens. Immunol. Anal. (1987), 279-91.
Editor(s): Ngo, That Tjien. Plenum: New York, N. Y.
CODEN: 56KEAX
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The principle of a bioaffinity electrochem. biosensor based on the difference in binding of 2 ligands is described. Biosensors for insulin, thyroxine, and **biotin** are detailed and the preparation of a 2-[(4-**hydroxyphenyl)azo]benzoic** acid-immobilized membrane is described. The fabrication and use of the insulin, thyroxine, and **biotin** biosensors are presented.
CC 9-1 (Biochemical Methods)
ST bioaffinity electrochem biosensor prepn use; thyroxine detn bioaffinity biosensor; **biotin** detn bioaffinity biosensor; insulin detn bioaffinity biosensor
IT **Avidins**
RL: ANST (Analytical study)
(complexes, with **biotin** analogs, in bioaffinity electrochem. biosensor for **biotin**)
IT 51-48-9, Thyroxine, analysis 58-85-5, **Biotin** 9004-10-8,

Insulin, analysis
RL: ANT (Analyte); ANST (Analytical study)
(determination of, bioaffinity electrochem. biosensor for)
IT **1634-82-8**, 2-[(4-**Hydroxyphenyl**)**azo**]**benzoic** acid
RL: PROC (Process)
(immobilization of, on membrane for biosensor)
IT 9001-05-2D, Catalase, **avidins** and **antibodies** labeled with 9003-99-0D, Peroxidase, **antibodies** labeled with
RL: ANST (Analytical study)
(in bioaffinity electrochem. biosensor)
IT **1634-82-8**, 2-[(4-**Hydroxyphenyl**)**azo**]**benzoic** acid
RL: PROC (Process)
(immobilization of, on membrane for biosensor)
RN 1634-82-8 HCAPLUS
CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



L34 ANSWER 22 OF 26 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1968:9354 HCAPLUS
DOCUMENT NUMBER: 68:9354
TITLE: Bifunctional reagents and the quaternary structure of protein
AUTHOR(S): Green, Norman Michael
CORPORATE SOURCE: Natl. Inst. Med. Res., London, UK
SOURCE: Biochemical Journal (1967), 104(3), 64P
CODEN: BIJOAK; ISSN: 0264-6021
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In the **biotin** (I)-**avidin** (II) complex, 4 subunits of II bind 4 moles. of I very firmly, probably in clefts within or between the subunits, when the chain linking the 2 **biotinamide** groups in di-N-**biotinylpolymethylenediamines** contained 9 or fewer C atoms. The indicator reagent, 4'-hydroxyazobenzene-2-carboxylic acid, exhibited monofunctional behavior, 4 mols. being required to saturate each mol. of II. Reagents with ≥12 C atoms were exactly bifunctional, and only C10 and C11 compds. exhibited an intermediate type of behavior. These results suggested that the carboxamido groups of the bound I were located about 7-8 A. below the van der Waals surface of the II mol. Examination of the reaction products from the bifunctional reagents in the electron microscope showed them to consist entirely of linear polymers of II up to 800 A. long (20 mols.). Branched chains were rare. Since all the binding sites were saturated, each mol. was doubly linked to its neighbors, suggesting that the 4 binding sites were grouped in 2 pairs on opposite sides of a mol. with 2:2 symmetry. A similar series of expts. employing bis(dinitrophenyl)polymethylenediamines (bis-DNP-polymethylenediamines) provided a clear picture of the arrangement of the mol. fragments, Fab and Fc, of anti-DNP **antibody**. High-affinity rabbit **antibody** (IgG) titrated with bis-DNP compds. of increasing chain length showed that

only 1 of the 2 DNP groups of the hexamethylene compound was effective in quenching the **antibody** fluorescence, while the octamethylene compound exhibited bifunctional behavior. Examns. of the soluble reaction product in the electron microscope showed polygonal rings of 3-6 **antibody** mols. Dimers were also common. Small projections present at each corner disappeared after digestion with pepsin at pH 4.5. Each projection was therefore an Fc fragment which formed the stem of a Y-shaped IgG mol., the 2 arms of the Y, the Fab fragments, linking the mols. together by way of the terminal binding sites.

CC 2 (General Biochemistry)

ST **BIOTIN AVIDIN** COMPLEX; PROTEINS QUATERNARY STRUCTURE; **AVIDIN BIOTIN** COMPLEX; QUATERNARY STRUCTURE PROTEINS; SUBUNITS **AVIDIN**; COMPLEX **BIOTIN AVIDIN**

IT **Avidin**
RL: BIOL (Biological study)
(**biotin** complex, quaternary structure of, determination of, bifunctional reagents in)

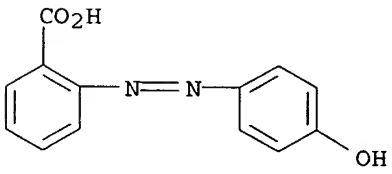
IT **1634-82-8**
RL: BIOL (Biological study)
(in protein quaternary structure determination)

IT 58-85-5D, **Biotin**, **avidin** complex
RL: PRP (Properties)
(quaternary structure of, determination of, bifunctional reagents in)

IT **1634-82-8**
RL: BIOL (Biological study)
(in protein quaternary structure determination)

RN 1634-82-8 HCAPLUS

CN Benzoic acid, 2-[(4-hydroxyphenyl)azo]- (9CI) (CA INDEX NAME)



L34 ANSWER 23 OF 26 MEDLINE on STN

ACCESSION NUMBER: 92265633 MEDLINE

DOCUMENT NUMBER: PubMed ID: 1667583

TITLE: Estimation of **avidin** activity by two methods.

AUTHOR: Borza B; Marches F; Repanovici R; Burducea O; Popa L M

CORPORATE SOURCE: Faculty of Chemistry, University of Bucharest, Romania.

SOURCE: Revue roumaine de virologie (Bucharest, Romania : 1990), (1991 Jul-Dec) Vol. 42, No. 3-4, pp. 141-4.
Journal code: 9100120. ISSN: 1018-0532.

PUB. COUNTRY: Romania

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199206

ENTRY DATE: Entered STN: 10 Jul 1992
Last Updated on STN: 3 Feb 1997
Entered Medline: 24 Jun 1992

AB The biological activity of **avidin** was estimated by two different methods. The spectrophotometric method used the **avidin** titration with **biotin** in the presence of 4 hydroxiazobenzen-

2'carboxilic acid as indicator. In the radioisotopic determination the titration with tritiated **biotin** was accomplished. Both methods led to the same results, but the spectrophotometric one is less **avidin** expensive and more rapid, being more convenient.

CT Animals
Antibodies, Viral: BL, blood
***Avidin: AN, analysis**
Avidin: IP, isolation & purification
Azo Compounds: CS, chemical synthesis
Biotin
Comparative Study
Evaluation Studies
Fluorescent Dyes: CS, chemical synthesis
Indicators and Reagents
Parainfluenza Virus 1, Human: IM, immunology
Rabbits
Radioimmunoassay: MT, methods
Spectrophotometry: MT, methods

RN **1405-69-2 (Avidin); 1634-82-8 (HABA); 58-85-5 (Biotin)**

CN 0 (**Antibodies**, Viral); 0 (Azo Compounds); 0 (Fluorescent Dyes); 0 (Indicators and Reagents)

L34 ANSWER 24 OF 26 MEDLINE on STN
ACCESSION NUMBER: 90120008 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2610355
TITLE: Immunoassay employing surface-enhanced Raman spectroscopy.
AUTHOR: Rohr T E; Cotton T; Fan N; Tarcha P J
CORPORATE SOURCE: Diagnostics Division, Abbott Laboratories, Abbott Park, Illinois 60064.
CONTRACT NUMBER: GM 35108 (NIGMS)
SOURCE: Analytical biochemistry, (1989 Nov 1) Vol. 182, No. 2, pp. 388-98.
Journal code: 0370535. ISSN: 0003-2697.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199002
ENTRY DATE: Entered STN: 28 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 22 Feb 1990

AB Surface-enhanced Raman scattering (SERS) was used to measure binding between biomolecules with mutual affinity, including antigen-**antibody** interactions. The conjugation of nitro groups onto bovine serum albumin enhanced their specific SERS activity 10(4)-fold. A dye, 2-[4'-hydroxyphenylazo]benzoic acid (**HABA**), with a major absorption at the Raman excitation frequency, demonstrated surface-enhanced resonance Raman scattering (SERRS) when captured from solution by **avidin**-coated silver films. Individual peak intensities showed a logarithmic relationship to the **HABA** concentration in solution over the range 10(-8) to 10(-5) M. Another resonance dye, p-dimethylaminoazobenzene (DAB) was covalently attached to an **antibody** directed against human thyroid stimulating hormone (TSH), without loss of **antibody** activity. The resultant conjugate was used in a sandwich immunoassay for TSH antigen: silver surfaces coated with anti-TSH **antibody** captured TSH antigen which in turn captured the DAB-anti-TSH **antibody** conjugate. A linear relationship was observed between the intensity of the resultant

SERRS signals and the TSH antigen concentration over a range of from 4 to 60 microIU/ml. These results demonstrate the potential utility of the SERRS effect as a readout in a one-step, no wash immunoassay system.

CT Animals
Antibodies: IM, immunology
Avidin: ME, metabolism
Azo Compounds: ME, metabolism
Binding Sites
Biotin: ME, metabolism
Cattle
Coloring Agents
Dinitrofluorobenzene
Dose-Response Relationship, Drug
*Immunoassay: MT, methods
Immunoglobulins
Proteins: AN, analysis
Research Support, Non-U.S. Gov't
Research Support, U.S. Gov't, P.H.S.
Serum Albumin, Bovine: AN, analysis
Silver
*Spectrum Analysis, Raman: MT, methods
Surface Properties
Thyrotropin: IM, immunology
Tritium: DU, diagnostic use

RN 10028-17-8 (Tritium); **1405-69-2 (Avidin)**; **1634-82-8 (HABA)**; **58-85-5 (Biotin)**; 70-34-8 (Dinitrofluorobenzene); 7440-22-4 (Silver); 9002-71-5 (Thyrotropin)

CN 0 (**Antibodies**); 0 (Azo Compounds); 0 (Coloring Agents); 0 (**Immunoglobulins**); 0 (Proteins); 0 (Serum Albumin, Bovine)

L34 ANSWER 25 OF 26 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 1995:22191 BIOSIS
DOCUMENT NUMBER: PREV199598036491
TITLE: Improvement of enzyme immunoassay for shrimp vibriosis.
AUTHOR(S): Song, Yen-Ling; Chang, Wei-Jen
CORPORATE SOURCE: Dep. Zool., Coll. Sci., Natl. Taiwan Univ., Taipei, Taiwan
SOURCE: Reports on Fish Disease Research, (1994) Vol. 0, No. 15, pp. 47-53.
ISSN: 1018-9637.
DOCUMENT TYPE: Article
LANGUAGE: Chinese
ENTRY DATE: Entered STN: 11 Jan 1995
Last Updated on STN: 11 Jan 1995

AB Rabbit anti-Vibrio vulnificus serum was purified with 33% Amonium sulfate and DEAE-cellulose ion exchange column. Different amount of N-hydroxysuccinimide **biotin** were added to the **immunoglobulin** solution. The amount of **biotin** covalently bound to one mole of Ig was determined with the **Avidin**-HABA reagent. It was estimated to be 2.5 to 9.6 moles **biotin** per mole Ig. Results were obtained from the ELISA (1) the best result was obtained when 9 moles of **biotin** bound to one mole of Ig; (2) better result was not obtained when less or more than 9 moles of **biotin** bound to one mole of Ig; (3) the sensitivities of direct and indirect immunodot blot assays were same, but the former took 5 steps and the result was reading after 4.5 hours. Purified monoclonal **antibodies** (Mabs) were **biotinylated** with the same protocol as the rabbit antiserum. However, the numbers of **biotin** conjugated to one mole of Mab were different from those

conjugated to polyclonal **antibodies** (Pabs). This result shows that the affinity of Mab to the **biotin** molecules is different from that of Pab.

CC Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Carbohydrates 10068
Enzymes - Methods 10804
Pathology - Diagnostic 12504
Immunology - General and methods 34502
Medical and clinical microbiology - Bacteriology 36002
Invertebrata:comparative, experimental morphology, physiology and pathology - Arthropoda: crustacea 64054

IT Major Concepts
Biochemistry and Molecular Biophysics; Enzymology (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Infection; Pathology; Physiology

IT Miscellaneous Descriptors
DIAGNOSTIC METHOD; **IMMUNOGLOBULIN**

ORGN Classifier
Vibrionaceae 06704
Super Taxa
Facultatively Anaerobic Gram-Negative Rods; Eubacteria; Bacteria; Microorganisms
Organism Name
Vibrio vulnificus
Taxa Notes
Bacteria, Eubacteria, Microorganisms

L34 ANSWER 26 OF 26 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN

ACCESSION NUMBER: 1988:320782 BIOSIS
DOCUMENT NUMBER: PREV198835026116; BR35:26116
TITLE: BIOAFFINITY ELECTROCHEMICAL SENSOR WITH PERFORMED METASTABLE LIGAND-RECEPTOR COMPLEX.
AUTHOR(S): AIZAWA M [Reprint author]
CORPORATE SOURCE: DEP BIOENG, FAC ENG, TOKYO INST TECHNOL, OOKAYAMA, MEGURO-KU, TOKYO 152
SOURCE: (1988) pp. 279-292. NGO, T. T. (ED.). ELECTROCHEMICAL SENSORS IN IMMUNOLOGICAL ANALYSIS. XI+360P. PLENUM PRESS: NEW YORK, NEW YORK, USA; LONDON, ENGLAND, UK. ILLUS. ISBN: 0-306-42580-7.
DOCUMENT TYPE: Book
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 11 Jul 1988
Last Updated on STN: 11 Jul 1988

CC Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry methods - Minerals 10059
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Minerals 10069
Biophysics - Methods and techniques 10504
Biophysics - Membrane phenomena 10508
Enzymes - Methods 10804
Endocrine - Pancreas 17008
Endocrine - Thyroid 17018
Immunology - General and methods 34502

IT Major Concepts
Biochemistry and Molecular Biophysics; Endocrine System (Chemical Coordination and Homeostasis); Enzymology (Biochemistry and Molecular

Biophysics); Immune System (Chemical Coordination and Homeostasis); Membranes (Cell Biology); Methods and Techniques

IT Miscellaneous Descriptors
PIG THYROXINE **BIOTIN** INSULIN 2-4
HYDROXYPHENYLAZOBENZOIC ACID **AVIDIN** CATALASE
ANTIBODY PEROXIDASE

ORGN Classifier
Suidae 85740
Super Taxa
Artiodactyla; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Artiodactyls, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

RN 51-48-9 (THYROXINE)
58-85-5 (**BIOTIN**)
9004-10-8 (INSULIN)
1634-82-8 (2-((4-**HYDROXYPHENYL**)**AZO**)**BENZOIC** ACID)
9001-05-2 (CATALASE)
9003-99-0 (PEROXIDASE)
7488-70-2Q (THYROXINE)

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     ALUMINIUM, ANABSTR, ANTE, APOLLIT, AQUALINE, AQUASCI, AQUIRE, BABS,
     BIBLIODATA, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
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                1   FILE AQUASCI
                1   FILE BABS
                6   FILE BIOSIS
                2   FILE BIOTECHNO
               16   FILE CAPLUS
                3   FILE EMBASE
                1   FILE ENERGY
               28   FILE EPFULL
                4   FILE ESBIOBASE
                3   FILE GBFULL
                5   FILE IFIPAT
                1   FILE INIS
                1   FILE JICST-EPLUS
                1   FILE LIFESCI
                5   FILE MEDLINE
                5   FILE PATDPAFULL
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                1   FILE PROMT
                4   FILE SCISEARCH
              307   FILE USPATFULL
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                4   FILE WPINDEX
L35            QUE (AVIDIN? OR STREPTAVIDIN?) AND BIOTIN AND (ANTIBOD? OR IMMU
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L36          20 S L35

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FILE 'WPIX' ENTERED AT 13:32:45 ON 03 AUG 2006

PROCESSING COMPLETED FOR L26
PROCESSING COMPLETED FOR L33
PROCESSING COMPLETED FOR L36
L37 31 DUP REM L26 L33 L36 (37 DUPLICATES REMOVED)
ANSWERS '1-22' FROM FILE HCAPLUS
ANSWERS '23-24' FROM FILE MEDLINE
ANSWERS '25-26' FROM FILE BIOSIS
ANSWER '27' FROM FILE AQUASCI
ANSWER '28' FROM FILE ENERGY
ANSWER '29' FROM FILE PROMT
ANSWERS '30-31' FROM FILE WPIX

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L37 ANSWER 27 OF 31 AQUASCI
ACCESSION NUMBER: 95:12216 AQUASCI
DOCUMENT NUMBER: ASFA1 1995 25-05363
TITLE: Improvement of enzyme immunoassay for shrimp vibriosis
AUTHOR: Song, Yen-Ling; Chang, Wei-Jen
CORPORATE SOURCE: Dep. Zool., Natl. Taiwan Univ., Taipei, Taiwan
SOURCE: COA FISH. SER., (1994) no. 47, pp. 47-53.
DOCUMENT TYPE: Journal
FILE SEGMENT: ASFA1
LANGUAGE: Chinese
SUMMARY LANGUAGE: Chinese; English
AB Rabbit anti-Vibrio vulnificus serum was purified with 33% ammonium sulfate and DEAE-cellulose ion exchange column. Different amount of N-hydroxysuccinimide **biotin** were added to the **immunoglobulin** solution. The amount of **biotin** covalently bound to one mole of Ig was determined with the **Avidin-HABA** reagent. It was estimated to be 2.5 to 9.6 moles **biotin** per mole Ig. Results were obtained from ELISA: (1) the best result was obtained when 9 moles of **biotin** bound to one mole of Ig; (2) better result was not obtained when less or more than 9 moles of

biotin bound to one mole of Ig; (3) the sensitivities of direct and indirect immunoblot blot assays were same, but the former took 5 steps and the result was reading after 4.5 hours. Purified monoclonal **antibodies** (Mabs) were biotinylated with the same protocol as the rabbit antiserum. However, the numbers of **biotin** conjugated to one mole of Mab were different from those conjugated to polyclonal **antibodies** (Pabs). This result shows that the affinity of Mab to the **biotin** molecules is different from that of Pab.

AB Rabbit anti-Vibrio vulnificus serum was purified with 33% ammonium sulfate and DEAE-cellulose ion exchange column. Different amount of N-hydroxysuccinimide **biotin** were added to the **immunoglobulin** solution. The amount of **biotin** covalently bound to one mole of Ig was determined with the **Avidin-HABA** reagent. It was estimated to be 2.5 to 9.6 moles **biotin** per mole Ig. Results were obtained from ELISA: (1) the best result was obtained when 9 moles of **biotin** bound to one mole of Ig; (2) better result was not obtained when less or more than 9 moles of **biotin** bound to one mole of Ig; (3) the sensitivities of direct and indirect immunoblot blot assays were same, but the former took 5 steps and the result was reading after 4.5 hours. Purified monoclonal **antibodies** (Mabs) were biotinylated with the same protocol as the rabbit antiserum. However, the numbers of **biotin** conjugated to one mole of Mab were different from those conjugated to polyclonal **antibodies** (Pabs). This result shows that the affinity of Mab to the **biotin** molecules is different from that of Pab.

L37 ANSWER 28 OF 31 ENERGY COPYRIGHT 2006 USDOE/IEA-ETDE on STN
ACCESSION NUMBER: 2004(22):132532 ENERGY
TITLE: In vivo evaluation of an anti-PSMA antibody conjugated with varying numbers of biotin molecules in a pretargeting protocol.
AUTHOR: Wilbur, D.S.; Hamlin, D.K.; Quinn, J.; Vessella, R.L. (University of Washington, (United States))
SOURCE: 12th Quadrennial Congress of the International Association for Radiation Research incorporating the 50th Annual Meeting of Radiation Research Society, RANZCR Radiation Oncology Annual Scientific Meeting and AINSE Radiation Science Conference. International Association for Radiation Research (International Organisation without Location); Australian Institute of Nuclear Science and Engineering (AINSE), Lucas Heights, NSW (Australia) AINSE. 2003. p. 269 of 414 p. Available in abstract form only, full text entered in this record. Conference: ICRR 2003: 12. Quadrennial Congress of the International Association for Radiation Research, Brisbane, QLD (Australia), 17 - 22 Aug 2003
DOCUMENT TYPE: Miscellaneous; Conference; Availability Note
COUNTRY: Australia
LANGUAGE: English
FIELD AVAILABILITY: AB

AB An investigation has been conducted to determine the effect of varying the number of biotin molecules conjugated with an anti-PSMA antibody (mAb) as part of our studies to optimize biotinylated antibodies and radiolabeled streptavidin in pretargeting protocols for Targeted Radionuclide Therapy of prostate cancer. In the investigation, the anti-PSMA antibody 107-1A4 was biotinylated with varying amounts of biotinamidocaproate N-hydroxysuccinimide ester. This procedure resulted in obtaining 107-1A4 with 2.3, 4.5, and 6.8 biotin conjugated as measured

by the standard HABA assay. The biotinylated 107-1A4 was radioiodinated and was evaluated in a pretargeting protocol in athymic mice bearing LNCaP human tumor xenografts. In the protocol, 50 mug biotinylated [125I]107-1A4 was injected, followed 48h later by 25 mug of avidin for blood clearance, and 1h after that 20 mug of radiolabeled succinylated recombinant streptavidin ([13 1I]sSAv) was administered. The tumor localization and tissue distribution was evaluated at 24, 48, and 72h post [131I]sSAv injection. With 2.3 biotin/mAb, an approximate 1:1 molar ratio (4-5 pmol/g) of sSAv/mAb was obtained at all three time points. With 4.5 biotin/mAb, a 1:1 ratio was observed at 24h, but approx. 2: 1 was observed at 48 and 72h pi. With 6.8 biotin/mAb, sSAv/mAb ratios of approximately 1.5:1; 2:1; and 3:1 were obtained at 24, 48, and 72h pi respectively. The amount of sSAv localized in the tumor was nearly the same (4-5 pmol/g) when 107-1A4 had 2.3 or 4.5 biotin conjugated, but decreased to 3-4.5 pmol/g with 6.8 biotin conjugated. Because the highest levels of co-localized sSAv was found with the lowest number of biotin conjugates, the observed differences in ratios of sSAv/mAb may be best explained as differences in internalization, and degradation of mAb and protease resistant sSAv. In duplicate experiments, similar results were obtained with biotinylated 107-1A4 F(ab')2 , but not with an mAb to a non-internalizing antigen

L37 ANSWER 29 OF 31 PROMT COPYRIGHT 2006 Gale Group on STN

ACCESSION NUMBER: 91:297091 PROMT
TITLE: LIFE TECHNOLOGIES RELEASES NEW SENSITIVE, RELIABLE PROTEIN BIOTINYLATION SYSTEM FOR CONVENIENT, REPRODUCIBLE PREPARATION OF PROTEIN/**BIOTIN** CONJUGATES.
SOURCE: News Release, (15 Apr 1991) pp. 1.
LANGUAGE: English

AB A new Protein Biotinylation System recently developed by Life Technologies, Inc. will aid researchers in preparing **biotin** conjugates of **antibodies** and other proteins. This easy-to-use system optimizes the biotinylation procedure, ensuring consistent batch-to- batch results, and providing unprecedented information on the nature of the conjugate. A complete set of reagents for the biotinylation of any protein, the system employs reliable NHS-ester biotinylation chemistry and allows researchers to easily and accurately determine the amount of **biotin** present in the resulting conjugate with an exceptionally sensitive **avidin/HABA** assay.
Full text available on PTS New Product Announcements.

TI LIFE TECHNOLOGIES RELEASES NEW SENSITIVE, RELIABLE PROTEIN BIOTINYLATION SYSTEM FOR CONVENIENT, REPRODUCIBLE PREPARATION OF PROTEIN/**BIOTIN** CONJUGATES.

A new Protein Biotinylation System recently developed by Life Technologies, Inc. will aid researchers in preparing **biotin** conjugates of **antibodies** and other proteins. This easy-to-use system optimizes the biotinylation procedure, ensuring consistent batch-to- batch results, and providing unprecedented information on. . . any protein, the system employs reliable NHS-ester biotinylation chemistry and allows researchers to easily and accurately determine the amount of **biotin** present in the resulting conjugate with an exceptionally sensitive **avidin/HABA** assay.
Full text available on PTS New Product Announcements.

RN 58-85-5 (**BIOTIN**)

L37 ANSWER 30 OF 31 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 2003-558999 [52] WPIX
DOC. NO. NON-CPI: N2003-444396

DOC. NO. CPI: C2003-150639
TITLE: Optically transparent carrier substrate for MALDI-MS assays, allowing optical and mass spectroscopic measurements to be carried out sequentially, e.g. in biochemical screening processes.
DERWENT CLASS: A89 A96 B04 D16 S03 S05 T01 V05
INVENTOR(S): KRESBACH, G M; OROSZLAN, P; SCHAR, M; SCHAER, M
PATENT ASSIGNEE(S): (ZEPT-N) ZEPTOSENS AG
COUNTRY COUNT: 98
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2003050517	A1	20030619	(200352)*	GE	81
RW: AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SK SL SZ TR TZ UG ZM ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					
AU 2002357547	A1	20030623	(200420)		
EP 1454127	A1	20040908	(200459)	GE	
R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI SK TR					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2003050517	A1	WO 2002-EP13312	20021126
AU 2002357547	A1	AU 2002-357547	20021126
EP 1454127	A1	EP 2002-804574	20021126
		WO 2002-EP13312	20021126

FILING DETAILS:

PATENT NO	KIND	PATENT NO
AU 2002357547	A1 Based on	WO 2003050517
EP 1454127	A1 Based on	WO 2003050517

PRIORITY APPLN. INFO: CH 2001-2296 20011213
AN 2003-558999 [52] WPIX
AB WO2003050517 A UPAB: 20030813
NOVELTY - A carrier substrate (I), for a matrix assisted laser desorption/ionization mass spectrometry (MALDI-MS) measuring system, is optically transparent to at least one incided excitation wavelength and allows one or more optical measurements and one or more mass spectroscopic measurements to be carried out sequentially.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a method of coupled qualitative and/or quantitative determination and mass spectroscopic identification of analyte(s) (A), involving contacting (I) with sample(s) containing (A) and sequentially carrying out optical and mass spectroscopic assays.

USE - The use of (I) (or the assay method using (I)) is claimed in qualitative or quantitative analyses for:

(i) determining, enriching or identifying chemical, biochemical or biological analytes (A) in screening processes in pharmaceutical research (especially high throughput screening) for clinical and preclinical

development;
(ii) real time binding studies and determination of kinetic parameters in affinity screening and research;
(iii) DNA and RNA analysis, toxicity studies or determination of gene or protein expression profiles;
(iv) detection of **antibodies**, antigens, pathogens or bacteria in pharmaceutical or agrochemical product development and research, human or veterinary diagnosis or symptomatic and presymptomatic plant diagnosis;
(v) patient stratification in pharmaceutical product development and therapeutic medicament selection; or
(vi) detection of pathogens, harmful agents and irritants (especially Salmonella, prions, viruses and bacteria) in food and environmental analysis.
ADVANTAGE - An optically transparent carrier substrate can be used for sequentially carrying out a high sensitivity optical analysis method followed by (after application of a MALDI matrix) a high resolution mass spectrometric analysis of the bonded molecule, specifically so that sequential optical and mass spectrometric analysis of microarrays can be carried out. In particular an optically transparent carrier substrate having a surface of metal oxide (particularly titanium dioxide, tantalum pentoxide or niobium pentoxide) gives good results in MALDI determinations.
Dwg.1/6

AB . . .
research;
(iii) DNA and RNA analysis, toxicity studies or determination of gene or protein expression profiles;
(iv) detection of **antibodies**, antigens, pathogens or bacteria in pharmaceutical or agrochemical product development and research, human or veterinary diagnosis or symptomatic and presymptomatic.
. .

TECH. . .
at the wavelength of a laser pulse applied in the desorption stage, specifically a hydroxybenzoic acid (e.g. gallic, gentisic or 2-(4-**hydroxyphenylazo**)-**benzoic** acid), succinic, 3-hydroxypicolinic, caffeic, ferulic, anthranilic, nicotinic, sinapic or trans-3-indoleacrylic acid, 4-nitroaniline, salicylamide, isovanillin, dithranol, 3-aminoquinoline, 1-hydroxy-isoquinoline, cinnamic acid (or. . . are preferably passivated (to minimize non-specific binding) with chemically neutral compounds, preferably albumins (especially bovine or human serum albumin), casein, **antibodies**, detergents (e.g. Tween 20 (RTM)), DNA (e.g., herring or salmon sperm extract) or uncharged hydrophilic polymers (e.g. polyethylene glycol or. . . nucleic acids (e.g. DNA, RNA or oligonucleotides), nucleic acid analogs (e.g. PNA) or derivatives with synthetic bases, mono- or polyclonal **antibodies** , peptides, enzymes, aptamers, synthetic peptide structures, glycopeptides, glycoproteins, oligosaccharides, lectins, proteins which are soluble, membrane-bonded or isolated from membranes (e.g. receptors or their ligands), antigens for **antibodies** (e.g. **biotin** for **streptavidin**), histidine-tag components or their complex binding partners; or (ii) acetylenes, alkaloids (e.g. with pyridine, piperidine, tropane, quinoline, isoquinoline, tropylidene, imidazole,. . .

L37 ANSWER 31 OF 31 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
ACCESSION NUMBER: 1996-112719 [12] WPIX
DOC. NO. NON-CPI: N1996-094450
DOC. NO. CPI: C1996-035415

TITLE: New PEG modified **avidin** - used for separation or determn. of antigen or **antibody** in sample by using complex containing **biotin** and PEG modified **avidin**.
DERWENT CLASS: B04 D16 S03
PATENT ASSIGNEE(S): (KIRI-N) GH KIRIKAGE GAKUEN
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 08012699	A	19960116	(199612)*		4

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 08012699	A	JP 1994-144570	19940627

PRIORITY APPLN. INFO: JP 1994-144570 19940627
AN 1996-112719 [12] WPIX
AB JP 08012699 A UPAB: 19960322
Avidin modified by PEG is new.
Also claimed is a method for the separation or the determn. of an antigen or an **antibody** contained in a sample by using a complex in which **biotin** is combined to an antigen or an **antibody** and **avidin** modified by PEG is combined in it.
ADVANTAGE - The complex is PEG-soluble and a complex prepared from an antigen protein is also PEG-soluble. It may be easily separated and detected.
In an example, specific egg white-originated **avidin** was dissolved in 0.3 M borate buffer to 1 mg/ml. An amount of activated 2,4-bis-(O-methoxypolyethylene glycol)-6-chloro-S-triazine was added to it and the mixture was adjusted to pH 7.0 with 1 N NaOH and reacted at 40 deg.C for 1.5 hr. It was ultrafiltered and centrifuged at 4 deg.C for 10 min. to give PEG-modified **avidin**. The **biotin**-combining activity was determined by using **HABA**. To investigate if the PEG-modified **avidin** maintains high affinity to a biotinated enzyme, the PEG-modified **avidin** was combined to biotinated peroxidase in a molar ratio of 1:1 and the affinity was examined by gel chromatography using Sephadex G-50. The PEG-modified **avidin** reacted quantitatively with the biotinated peroxidase. The behaviour of the PEG-modified **avidin** and unmodified **avidin** in an aqueous two-phase system of dextran/PEG was examined. The former was transferred quantitatively to the PEG phase, while the latter was not transferred.
Dwg.0/2
TI New PEG modified **avidin** - used for separation or determn. of antigen or **antibody** in sample by using complex containing **biotin** and PEG modified **avidin**.
AB JP 08012699 UPAB: 19960322
Avidin modified by PEG is new.
Also claimed is a method for the separation or the determn. of an antigen or an **antibody** contained in a sample by using a complex in which **biotin** is combined to an antigen or an **antibody** and **avidin** modified by PEG is combined in it.
ADVANTAGE - The complex is PEG-soluble and a complex prepared from an antigen protein is also PEG-soluble. It may be easily separated and detected.
In an example, specific egg white-originated **avidin** was

dissolved in 0.3 M borate buffer to 1 mg/ml. An amount of activated 2,4-bis-(O-methoxypolyethylene glycol)-6-chloro-S-triazine was added to it. . . at 40 deg.C for 1.5 hr. It was ultrafiltered and centrifuged at 4 deg.C for 10 min. to give PEG-modified **avidin**. The **biotin**-combining activity was determined by using **HABA**. To investigate if the PEG-modified **avidin** maintains high affinity to a biotinated enzyme, the PEG-modified **avidin** was combined to biotinated peroxidase in a molar ratio of 1:1 and the affinity was examined by gel chromatography using Sephadex G-50. The PEG-modified **avidin** reacted quantitatively with the biotinated peroxidase. The behaviour of the PEG-modified **avidin** and unmodified **avidin** in an aqueous two-phase system of dextran/PEG was examined. The former was transferred quantitatively to the PEG phase, while the. . .

TT TT: NEW PEG MODIFIED **AVIDIN** SEPARATE DETERMINE ANTIGEN **ANTIBODY** SAMPLE COMPLEX CONTAIN **BIOTIN** PEG MODIFIED **AVIDIN**.

AW: POLYETHYLENE GLYCOL.

* Please return all sheets attached to this Search Request form. THANKS

Access DB# 196433

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Molly Ceperley Examiner #: 59757 Date: 07/25/06
Art Unit: 1641 Phone Number ~~30~~ 2-0813 Serial Number: 10/624,503
Mail Box and Bldg/Room Location: Rem 3A51 Results Format Preferred (circle): PAPER DISK E-MAIL
↳ Rem 3C70

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): See bibliographic data sheet attached

Earliest Priority Filing Date: 11/10/1998

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Please search for the combination of avidin (or streptavidin) AND Biotin AND HABA (and its derivatives) AND antibodies specific for HABA (may be biotinylated)
See the HABA structure of Appendix A and include searches for the derivatives (8) through (11) wherein A = $-(CH_2)_{2-10}^-$ or $-CH=CH-$ and B = $-(CH_2)_{2-10}^-$.

→ See claims 1-5.

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STAFF USE ONLY	Type of Search		Vendors and cost where applicable
Searcher:	NA Sequence (#)		STN
Searcher Phone #:	AA Sequence (#)		Dialog
Searcher Location:	Structure (#)		Questel/Orbit
Date Searcher Picked Up:	Bibliographic		Dr.Link
Date Completed:	Litigation		Lexis/Nexis
Searcher Prep & Review Time:	Fulltext		Sequence Systems
Clerical Prep Time:	Patent Family		WWW/Internet
Online Time:	Other		Other (specify)

PTO-1590 (8-01)